HARVARD
MEDICAL LIBRARY

IN THE
Francis A. Countway
Library of Medicine
BOSTON

W. C. B. Fifield.

Harrison Sq.

THE TREATMENT

OF

OBSTINATE ULCERS

AND

CUTANEOUS ERUPTIONS

ON THE LEG,

WITHOUT CONFINEMENT.

BY

HENRY T. CHAPMAN, F.R.C.S.,

FORMERLY SURGEON TO THE ST. GEORGE'S AND ST. JAMES'S DISPENSARY, AND SOMETIME LECTURER ON SURGERY AT THE SCHOOL OF MEDICINE ADJOINING ST. GEORGE'S HOSPITAL.

Third Edition.

LONDON:
JOHN CHURCHILL, NEW BURLINGTON STREET.

MDCCCLIX.

A Third Edition of this little work having been called for, the author has endeavoured to render it as complete an exposition as possible of the practice advocated, without increasing its bulk. Whatever additional matter has been introduced is concisely interwoven with the former text; and where new cases are admitted, they merely occupy the place of others which have been withdrawn to make room for them.

He trusts, therefore, that, within nearly the same compass, this Edition will be found more practically useful than its predecessors, and more deserving of the favour with which they have been received.

Lower Seymour Street,
Portman Square.
March, 1859.

CONTENTS.

PAGE

Introductory Observations 1

Sources of Intractability 6

Constitutional Treatment 30

Local Treatment 46

„ „ of Indolent Ulcers 52

Dressings 69

Local Treatment of Varicose Ulcers 96

„ „ of Irritable Ulcers... 106

„ „ of Callous Ulcers 122

Prognosis 140

Conclusion 144

Treatment of Cutaneous Eruptions on the Leg . 147

By the same Author, price 3*s.* 6*d.*,

VARICOSE VEINS

AND

THEIR TREATMENT.

INTRODUCTORY OBSERVATIONS.

In offering to the notice of the Profession the first edition of this Essay, in 1848, I proposed to myself three principal objects:—*first*, to place in as strong a light as possible the greater efficacy and expediency of the treatment by bandaging—which seemed to be declining in repute—than that by rest, which appeared to be once more gaining ground; *secondly*, by the suggestion of a substitute for Baynton's strapping, exempt from its inconveniences, the extension of the principle of support to cases in which it had hitherto been considered as totally inadmissible; and, *thirdly*, the advocacy of aqueous dressings—that is to say watery solutions and preparations—in preference to topical applications of an unctuous kind.

The extreme suffering resulting from the refractory nature of ulcers on the leg, more especially from their prevalence among those classes of the

community whose very existence depends upon a free and vigorous use of their limbs, coupled with the impracticability of admitting one-fourth of them into the wards of a hospital for treatment,* appeared to me sufficient motives for calling attention to any plan of treatment *not requiring confinement*, which, even if not *more* successful than those heretofore employed, possessed a decided superiority in point of simplicity, cheapness of material, and ready adaptation to the numberless modifications of the disease presented to our notice.

Such a superiority may fairly be claimed for the proceedings detailed in the following pages; ten years' subsequent experience of their operation having convinced me, not alone that ulcers of the leg treated in this simple manner get well as quickly and as soundly as under any other mode

* M. Parent Duchatelet, in his researches into the causes of the existence of ulcers of the leg among so large a proportion of the Parisian artisans, published in the 4th volume of the "Annales d'Hygiène Publique," states that, in eleven years, 3373 individuals were received into the hospitals of Paris, with atonic or varicose ulcers on the leg. He further ascertained, that out of 1565 who sought admission, the half of which were cases of a serious character, for want of room only 337 could be received. Thus 1228 were rejected, considerably more than three-fourths of the sum total of those in need of assistance.

In London the amount of sufferers from this disease, among the labouring classes, must be far greater, and a much smaller quota is admitted into the hospitals.

of practice, but that cases, unmanageable by any other system of treatment with which I am acquainted, will promptly yield to their judicious application;—in short, that I did not rate them too highly in stating my belief that they would be found to possess "all the advantages without the disadvantages of Mr. Baynton's method."

In corroboration of my own (perhaps partial) estimate, I might cite the testimony of numerous friends, and that of many total strangers to me, who have given the practice a fair trial, and have warmly adopted it. The following extracts, however, from the "Dublin Quarterly Journal of Medical Science" will carry more weight than anything else I can advance in its behalf:—"In a late number we recorded our experience as being in favour of Mr. Chapman's mode of cure. . . . . We have since adopted this plan of treating chronic ulcers of the leg extensively, both in hospital and private practice, and have seen it used by others; and we have much satisfaction in stating that in the generality of cases we succeeded in accomplishing with it a rapid and inexpensive cure." The advantages derived from the employment of watery solutions of various astringents, such as nitrate of silver, chloride of lime, &c., are duly acknowledged, but the "rapidity and permanency of the cure" are mainly ascribed to the equable sup-

port of the limb afforded by the wet straps and the bandage. Animadverting on the annoying inflammation and excoriation so frequently produced by plaster strapping, the reviewer remarks :—"In no case treated by us did the slightest cutaneous irritation or inflammation ensue; and of Mr. Chapman's method of treatment we entertain the highest opinion, on account of its cleanliness, facility of application, economy, and soothing support."*

But, notwithstanding my conviction of the general superiority of those modes of cure which are founded on the principle of support, it is very far from my intention to advocate an *exclusive* reliance upon them. In obstinate cases of this troublesome complaint, I am too well aware that we require all the artificial aid that can be brought to bear against it. I have accordingly endeavoured to show that, if we would avoid frequent disappointment, instead of attempting to apply any one plan of treatment to all its varieties, our remedial measures must be selected, combined and adapted, from the varied and ample resources of past and present experience, to meet the special exigencies of each individual case.

In the last and the present edition is incor-

* "Dublin Quarterly Journal of Medical Science," for August, 1849, p. 212. The work has further, I understand, gone through more than one edition in the United States.

porated a series of papers on the local treatment of ulcers, communicated to the "Medical Times and Gazette" in the early part of 1852. A section also has been added on the management of erythematous, eczematous, and other cutaneous eruptions upon the lower extremity.

For the three microscopic illustrations of injected granulations, figs. 2, 3, and 4, p. 16, I am indebted to the kindness of Mr. Quekett.

SOURCES OF THE INTRACTABILITY OF ULCERS ON THE LEG.

It is scarcely possible to frame a definition of the term ulcer more accurate and comprehensive than that contained in the chapter on Ulceration of Dr. Thomson's valuable treatise on Inflammation. "A suppurating surface," he observes, "when it is long in cicatrizing, and when it passes from a healthy to a morbid state, may, according to the modern acceptation of the word ulcer, come under that designation, without ulceration having been developed in it. Every suppurating surface of long standing, taking the word in this extended signification, may be considered as an ulcer; at any rate, the epoch at which it ceases to be a wound or abscess, and becomes an ulcer, is not very clearly defined. This proposition is so far true, that, in the definition

and classification of ulcers, authors have always been obliged to commence with the healthy condition of the suppurating surface, or, in other words, to commence with what they term a healthy ulcer." . . . . "Between simple suppurating surfaces recently produced in a healthy subject, by a wound or a burn, and which have a tendency to heal readily, and suppurating sores which manifest little or no disposition to cover themselves with a cicatrix, a great variety of morbid phenomena exists, which it is necessary to distinguish one from the others, because they require different and even opposite modes of treatment."

If an appeal to general experience were not sufficiently conclusive on the point, a reference to the cases narrated by all who have written on the subject would prove that ulcers of the lower extremity, as a class, not only belong to that extreme grade, in Dr. Thomson's scale, of "suppurating sores which manifest little or no disposition to cover themselves with a cicatrix," but are extreme examples of it. Whatever may have been their origin, however various their aspect, the one feature by which they are distinguished from ulcers of other parts of the body, is an inaptitude to heal under treatment which ordinarily proves successful in suppurating surfaces occurring elsewhere. It is from this circumstance, and the degree to which

they cripple active exertion, that they derive their importance;* it is this peculiarity which has attracted the attention of surgical writers from the earliest period, and has caused them to be treated of almost as a distinct branch of surgery.

The causes of this intractability are manifold; some of them merely affecting ulcers on the leg in common with those of other regions; others which appertain more exclusively to this locality; and more than one may be active, in different degrees of intensity, at the same time, in the same individual case. They may be classed under two heads, those which spring from *constitutional* and those which depend upon *local* causes,† but we rarely find either class in operation singly; constitutional and local elements of intractability being

* A "bad leg" is an every-day occurrence, which the hospital student, intent upon interesting cases and splendid operations, too often passes by as quite beneath his notice. Far otherwise thought a veteran professor of great practical acumen, when he thus heartily broached the subject to his class: —"Nothing positively, in all surgery, is so interesting to a junior pupil as the treatment of ulcers."— "Colles' Lectures on Surgery," edited by Dr. M'Coy.

† I need scarcely remark, that this must not be confounded with the old classification of ulcers, according to their local or constitutional *origin;* a ground of distinction not often practically applicable to ulcers on the leg; since the origin of one of these sores may be purely local, and its intractability may depend, in a great measure, upon constitutional causes, and *vice versâ*. In fact, between the origin of an ulcer on the leg and its cicatrization years frequently elapse, and every source of intractability may have predominated in turn.

mingled in nearly every case of chronic ulcer, the latter commonly outlasting the former, if they do not always preponderate over them *ab initio*.

The first point, therefore, to which our attention should be directed, in undertaking the management of one of these cases, is to ascertain, as nearly as we can, what is the predominating source of intractability at the time we are called upon to treat it, and to which head it belongs; always bearing in mind that it is not sufficient simply to originate the reparative effort, by removing the prominent obstacle to granulation; means are still to be perseveringly employed which are calculated to do away with all other impediments to the healing process, and sustain it in full vigour until it terminates in sound cicatrization.

Constitutional sources of intractability comprise those morbid conditions of the system which exercise a pernicious influence over all local maladies, such as derangements of the digestive organs, of the secretory and excretory apparatus connected with them, and of the uterine functions; a feeble discharge of all the vital operations, whether it be the result of a cachectic habit of body, or of debility induced by other forms of disease; irritability of the nervous system, original or acquired. Any change, in short, which disturbs the general

health will produce a corresponding impression upon the ulcer; thus, the whole of the newly-organised structure in a sore just cicatrized has been known to disappear in a few hours as a consequence of diarrhœa; mental anxiety will arrest the progress of a healing ulcer; and sudden changes of the weather often affect them powerfully.

Important as it undoubtedly is that a due allowance should be made for such impediments to healthy action, they cannot be said to bear any exclusive reference to these affections; nor are they so uniformly present as to account satisfactorily for the obstinacy which so invariably characterizes ulcers on the leg. Present or absent, moreover, a very simple experiment will suffice to indicate what is the true source of their peculiar intractability, the point in which we are chiefly interested. As long as the limb is maintained in the horizontal position, no very perceptible difference can be detected between a recent ulcer of the lower extremity and one situated elsewhere; but immediately the patient stands, or allows the foot to hang down, the surface and circumference of all but the most callous of these sores present a turgid, livid aspect; a copious exudation of serous discharge takes place, and, not unfrequently, a

gush of blood from the overloaded vessels occurs. Let the leg be raised to its former position, and a rapid alteration for the better is observed; the turgidity of the vessels disappears, and a hue more or less florid succeeds to the livid tint resulting from the dependent posture.

The *peculiar* intractability, then, of ulcers on the leg, is clearly traceable to the dependent position of the lower extremity, which, by impeding the free return of blood in the veins, places the capillaries of the ulcer and of its immediate neighbourhood—as well as the nerves associated with them in that function—in an unfavourable condition for originating and carrying on the reparative process. If the case is left to nature, the stage of inactivity hence arising may be prolonged almost indefinitely, exposing the sore, in the meantime, to morbid actions which may totally change its aspect. To the atonic character naturally impressed upon an ulcer by its locality, will thus be superadded inflammatory, irritable, or callous features; which, being regarded as characteristic of distinct varieties of the complaint, have been laid hold of as grounds of classification; and, as the epithets themselves lead to practical distinctions in the treatment, they, and the classification founded upon the conditions they ex-

press, are retained by almost all writers on the subject.*

Inflammation, however, is not so much a distinctive feature of any one class of these sores, as an accident to which they are all liable in common with those of other regions; so that, in adopting the above arrangement in the following pages, inflammatory sores, as a class, will be omitted; and ulcers on the leg will be considered under the heads of *Indolence*, *Irritability* and *Callousness*, with or without the complication of varix. But the presence of the two last features must never be allowed to divert our attention from the first, since they are but of secondary importance in comparison with it; the disposition to indolence being a permanent source of intractability, upon which they are, if I may so term it, merely engrafted. To the state of the capillary circulation, therefore, we must chiefly look, not only for an explanation of

* Of these the best known and most elaborate is that of Sir Everard Home, four of whose six classes are based upon the terms, healthy, weak, inflammatory, and indolent; for which, however, he has substituted what he assumes to be the proximate causes of those conditions—the strength or weakness, excess or deficiency, of *action* in the part or constitution—but without defining the precise meaning which he attaches to the word "action." His two last divisions embrace specific ulcers, and those which are prevented healing by a varicose state of the veins. Dr. Thomson avows that he prefers the old nomenclature; and Sir Everard himself very frequently recurs to it.

the local intractability peculiar to these cases, but also for indications of the means by which it may best be overcome.

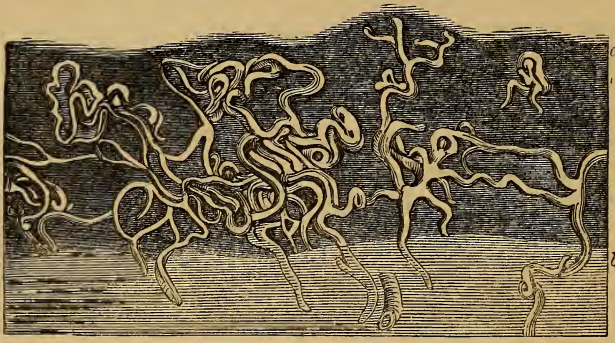
Microscopic investigations demonstrate that, during the reparative process, the capillary vessels of an ulcer, in any region, are more dilated than those of the sound parts, and that the blood circulates through them more slowly, the circulation recovering its normal velocity in proportion as the ulcer progresses towards cicatrization.*

In his Croonian Lectures, published in the "Philosophical Transactions for 1829," Sir E. Home has described the magnified granulations of a healthy sore as presenting an appearance of "eminences, consisting of small clusters of tortuous bloodvessels;" and in a paper by Mr. Liston, "On the Arrangement of the Intermediate Vessels on Surfaces secreting Pus," in the twenty-third volume of the "Medico-Chirurgical Transactions," illustrated by a profile sketch of the injected capillaries of an ulcer, by the late Mr. Dalrymple—of which, with that gentleman's permission, a copy is annexed,—he speaks of these

* See the details of an experiment by Sir Charles Hastings, in which he traced, by the aid of the microscope, in the web of the frog's foot, the state of the capillary circulation from the commencement of inflammation to the formation of a slough, and subsequently, during the granulating process, until cicatrization was completed.—"Treatise on Inflammation of the Mucous Membrane of the Lungs," p. 84.

vessels as "enormously and irregularly dilated—varicose in fact."

FIG. 1.—*A Section of Injected Granulations, magnified about four hundred diameters.*



a The free surface. *b* The attached surface.

A certain amount of dilatation of these vessels appears, accordingly, to be a necessary condition to the establishment of granulation; it may be for the purpose of retarding the flow of blood through them, in order to favour the deposition of new matter from that fluid—termed by a French writer so emphatically *la chaire coulante;* and further, probably, to facilitate the development of new capillaries, described by Mr. Liston, in the paper just referred to, as projected into the new and adventitious structure from that beneath it. Unless, however, *a due proportion be maintained*

between the vascularity and the rate of deposition in a granulating surface, that process will not long be carried on healthily.

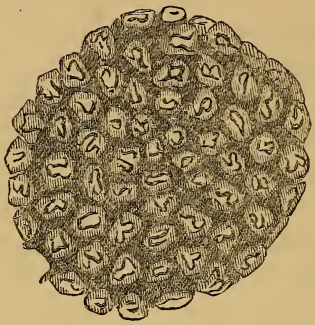
LOCAL SOURCE OF THE INDOLENCE OF ULCERS ON THE LEG.

Now the capillaries of an ulcer in a depending part, being acted upon by two opposing forces—the *vis a tergo* of the heart and arteries on the proximal side, and more or less pressure, according to the weight of the column of blood in the veins, bearing on their distal extremities,—circulation through them is impeded, their dilatation becomes excessive, and, the balance between vascularity and deposition being disturbed, reparative action is impaired, if not wholly suspended.

The naked eye will readily detect this redundant vascularity in the loose, semi-transparent granulations formed under circumstances so unpropitious, especially when compared with those of a healthy ulcer. In the one case they present the appearance of a mere congeries of membranous cells, surcharged with purple blood, in the other, they are round, compact, and florid, looking solid and fleshy, rather than cellular. But it is still more clearly seen in the following woodcuts, from drawings of three microscopic preparations of injected

ulcers in Mr. Quekett's very beautiful collection. Figs. 2 and 3 are front and profile portraits of

Fig. 2.



healthy granulations, magnified forty-five diameters, in which a due proportion exists between

Fig. 3.

Fig. 4.

the newly-formed capillaries and their envelopes of organised lymph. In fig. 4, taken from a subject

in whom the veins of the limb were varicose, the granulations are much more elongated, and consist of little else but convoluted capillaries; as if loop upon loop had been projected with abnormal force from the parent trunks beneath.

The hyperæmia of the papillæ in fig. 4, is strongly contrasted with the moderate vascularity of those in fig. 3; and the disproportion between the vessels and their deposit in the former specimen is very distinctly shown.

And here I may remark, that sufficient importance does not appear to have been accorded, by any writer on this subject, to the circumstances in which the capillaries of a granulating ulcer in a depending part are placed by the loss of an elastic envelope like the skin. The acceleration of the blood's motion during rapidly repeated muscular efforts, when an alternate action and re-action between the muscles and the skin are kept up, speedily emptying the superficial veins, is sufficient to prove that the skin, by its resilience, must afford an essential aid to the circulation in the veins. And since, as long as it remains entire, it thus exercises a constant and uniform control over forces tending from within outwards, it is obvious that the vessels of a granulating surface, deprived of the support of this elastic integument by a breach in its continuity, will have nothing but the

feeble resistance of their own delicate walls to oppose to the pressure from within.

If the distension thus produced be not artificially counteracted, the nearly stagnant blood being quite unfit for any healthy operation, exudation of plastic lymph ceases, the new vessels themselves are gradually absorbed, and the sore at length acquires an indolent or atonic habit. This may be received, in fact, as the natural history of chronic ulcer on the leg; since, if left to itself, whatever other phases it may pass through before it reaches the atonic stage, "to this favour will it come" at last. "It is immaterial," says Sir Everard Home, "whether in its origin an ulcer was healthy, weak, or irritable; if not cured within a certain time, it becomes indolent."*

LOCAL SOURCES OF IRRITABILITY.

But the mischief arising from this state of mechanical congestion is not confined to the blood-vessels. The nerves associated with them, oppressed and irritated by their over-distension, are not merely incapacitated for the healthy discharge of their share in the reparative function, but are kept by it in a greater or less degree of morbid sensibility. This amounts, in many cases, to something more than a transient affection, symptomatic of the

* "Practical Observations on Ulcers of the Leg," p. 189.

oppressed condition of the circulation. It either becomes an enduring and distinctive character of the sore, as a consequence of the long-continued irritation to which the nerves have been exposed in neglected and mismanaged cases, or may have been an original feature from its earliest period. Dr. Billing suggests that morbid sensibility may sometimes be caused by inflammation of nerve, adding—"I know of no other term by which to express their lesion."*

This appears to be a very probable explanation of the persistent irritability last referred to, which yields more commonly to local antiphlogistic measures than to any other treatment. As its tense and fiery look would denote, it is often far more acutely felt in the surrounding skin than in the ulcer itself; and this is especially the case with sores situated upon or behind the malleoli, the protuberance of which keeps the inflamed integument continually on the stretch. In irregularly shaped sores about the ankle, a mere point of skin jutting out from their margin will occasionally be the seat of pain, recurring at uncertain periods with increased severity. During the paroxysm this spot becomes more prominent, and so exquisitely sensitive, that the patient cannot obtain

* "Principles of Medicine," p. 46. Fifth edition.

ease in any position. Now and then, I have seen a drop of serous fluid exude from the surface of such an eminence, which has apparently afforded speedy relief.

The excessive pain which, in some instances, attends Varix, is ascribed by Sir B. Brodie, in his Lectures, to the presence of a nervous filament strained across the tumour. The acute sensibility of varicose ulcers is, I believe, more frequently occasioned by chronic inflammation of the enlarged veins, a complication which will be more fully considered under the head of Varicose Ulcers.

Some writers have laid down positive diagnostic marks by which an irritable sore may be at once recognised; but there are no invariable external indications of morbid sensibility; it is manifested by ulcers of a great variety of aspect, and as long as it continues, proves an almost certain obstacle to healthy secretion and granulation.

LOCAL SOURCE OF CALLOUSNESS.

The deposit of coagulable lymph in which the majority of ulcers on the leg are imbedded, is so much greater in degree than we meet with it in those of other parts, as a mere sequel of inflammatory action, that its excess may fairly be attri-

buted to the locality, and regarded as one of the accidents of their position.

Sir Charles Bell, in his "Institutes of Surgery,"* noticing "the welt around the ulcer" as a peculiarity of the complaint, ridicules an idea propounded by some author, that it is a "circumvallation thrown up for the defence of the sore." It is not very clear what is meant by this figure of speech; but, interposed as it is between the subjacent vessels and the new capillaries forming on the surface of the sore, this "circumvallation" does appear to act as a barrier to check a too free egress of blood from the former, and secure the yet fragile walls of the latter from plethora or rupture; and may thus be looked upon as a special provision of nature, to guard against the mischief to which the vessels, engaged in an attempt to repair a breach of surface in a depending part, would otherwise be constantly exposed. In ulcers prone to hæmorrhage, I have almost invariably noticed that this deposit is absent; and, when its absorption has been effected by art, nearly all sores bleed as soon as the bandage is taken off, if the foot be allowed to hang down.

Be this as it may, the longer the case is neglected, the more restricted does the communication between the subjacent vessels and the capillaries of

* Vol. i. p. 87.

the sore appear to become, until at length the supply of blood which reaches the surface is barely sufficient to maintain a feeble vitality, but not enough to carry on the reparative process. To a chronic ulcer in this low state of vascularity and sensibility, the epithet "callous" is aptly enough applied; and there is but little prospect of healing such a sore until the absorption of its indurated base and margin be accomplished.

But callous ulcers are not necessarily insensible. Many an old sore, with pale, shining, bloodless surface, and thickened margin, the rugged skin of which resembles that of the sole of the foot, is as painfully sensitive as the most angry-looking ulcer. This combination of callousness and irritability is not unfrequent in sores lying behind or below the ankle, and perhaps no specimen of the disease is more difficult to deal with. In some of these cases the sore is almost tied down by adhesions to the back of the malleolus; and the morbid sensibility has appeared to me to be augmented, if it is not caused, by the pressure of the indurated skin and the deposit beneath it upon the nerves of the part. On the other hand, it is by no means unusual to find an insensible sore of long standing become extremely tender as soon as it has been brought into a healing condition by the absorption of this deposit, and continue so until nearly

cicatrized. It is well to bear this in mind, or we might be tempted to abandon a suitable mode of treatment at the very time it is most promising.

VARICOSE ULCERS.

The frequent co-existence of a varicose enlargement of the superficial veins of the limb with ulcers on the leg, and the greater difficulty in curing them when thus complicated, have led surgeons to regard Varix as a distinct source of intractability, and to describe them as a distinct class, under the name of "varicose ulcers." And, when the veins are dilated to such an extent as to annul the function of their valves, the impediment to the circulation,* and consequently to the esta-

* Mr. Skey has expressed a doubt whether varicose dilatation of the veins offers any obstruction to the circulation in the capillaries of an ulcer on the leg. This question is so entirely set at rest by the following simple experiment, instituted with the view of explaining how obliteration of the trunk of the saphena may afford relief to a varicose state of its branches, that I cannot refrain from quoting it. "If I put on a bandage," says Sir B. Brodie, "and squeezed the blood out of the veins below, and then put my finger on the vena saphena above, so as to stop the circulation through it, I found, on taking off the bandage, the patient being in the erect posture, that the cluster of veins below filled very slowly, and only from the capillary vessels. But if (the patient being in the erect posture) I removed the pressure from the saphena, the valves being of no use, the blood rushed downwards by its own weight, contrary to the course of the circulation, and filled the varicose clusters below almost instantaneously."—"Lectures," p. 187. As long as a varicose limb is at

blishment of healthy granulation, will undoubtedly be greater, in every form of ulcer, in proportion to the increased weight of the column of blood in them; but this is simply an aggravation of the ordinary difficulty under which the capillary circulation of a sore in any depending part must always labour, until it be removed by artificial aid.

Applied thus comprehensively to all ulcers accompanied by a varicose state of the veins, the term indicates nothing more than an increased disposition to atony; implying a difference in degree, but not in kind, between varicose and indolent sores. By some surgical authorities, however, it is restricted to ulcers which have been directly *caused* by the distention and inflammation of the skin consequent on enlargement of the veins. In this signification it is employed by Sir B. Brodie, in his thoroughly practical lectures on this variety of sore; and it would seem to be so understood by Mr. Vincent, albeit such a limitation is scarcely reconcileable with his statement that "we may trace the greater number of sore legs to the presence of Varix;" since, in comparison with

---

rest, in the horizontal position, there may be actually *less* obstruction to the circulation than when the veins are in a normal state; but the case is widely different when circumstances compel the patient to stand or walk.

the number *complicated* by this malady, the proportion actually *caused* by it is small.*

The physiognomy of the ulcer caused by Varix is, in its early stage, so uniformly characteristic, as in a great measure to justify its being regarded as a distinct variety. It is generally a superficial sore, lying in the centre of a patch of discoloured skin, the tint of which varies from a dusky yellow to a purplish brown. Its margin is not elevated or well defined, as in common cases of indolent ulcer, but blends almost imperceptibly with the surrounding skin, so that, when the surface of the sore is livid, during the dependent position of the limb, it is often difficult to discover the exact line where the ulcer commences. But when it has existed for any great length of time, its margin becomes thickened and indurated by the deposition of lymph, and it is no longer distinguishable from an ordinary indolent or callous sore.

Mr. Vincent is of opinion that, in very many of these cases, subacute or chronic inflammation of

* This assertion is not made at random. In upwards of one hundred cases, I carefully inquired into the mode in which the ulcer commenced; and not more than five broke out by pimples, vesicles, or scabs, generated by Varix. Several originated in the rupture of a varicose vein, and a few were ascribed to cutaneous eruptions of various kinds upon both trunk and limbs. The remainder, amounting to full eight-tenths, were the result of external injury, Varix being present and absent in about equal proportions.

the veins is superinduced upon mere dilatation. I have already expressed my belief that to this cause the morbid sensibility of ulcers thus complicated is frequently owing; the pain may be distinctly traced, by the finger, from the sore along the course of the vein or veins affected. It is by no means uncommon, moreover, to find an old varicose vein lying in a channel hollowed out partly by its own pressure, but the depth of which is materially increased by the deposition of lymph, the product of inflammation, communicated, doubtless, by the diseased vein to the cellular tissue surrounding it. This circumstance may account for the elongated oval form varicose sores so often assume; the ulceration naturally creeping upwards in the track of the inflamed vein.

Whether all these peculiarities originate in inflammatory action or not, in no form of ulcer on the leg is the ordinary source of the refractory nature of the complaint more readily demonstrated. Excessive as is the congestion so long as the foot is dependent, immediately the limb is raised to the horizontal position, the dark blood is drained off from the turgid capillaries through the ample space of the dilated veins, and the activity of the circulation is restored, as the sudden change which the surface of the sore undergoes, from purple to florid, sufficiently testifies.

Although, therefore, the extension of inflammatory action from the veins to the subcutaneous and cutaneous tissues may sometimes give rise to ulceration, and stamp it with a very distinct aspect, I think we are scarcely warranted in assuming that any source of intractability exists, in ulcers directly caused by varicose veins, different or *distinct* from that which predominates in the indolent species. At any rate, we shall gain nothing, in a practical point of view, by retaining the distinction between sores caused by Varix and those which are merely complicated by its presence; since, precisely the same means which cure the latter will prove equally successful with sores of the peculiar character above described.

But I am disposed to go farther still, and contend that we ought to discard the term *varicose ulcer* from our classifications altogether. If it be restricted to ulcers caused by Varix, a large proportion of cases, the cure of which is rendered more difficult by this complication, will not be included under the term. If, on the other hand, it is applied to every sore accompanied by a varicose state of the veins, it will necessarily comprehend all other classes of ulcer in turn. All this confusion will be avoided, and the nature of one of these cases will, I conceive, be defined much more simply and accurately, if, instead of employing a

designation so vague and general, we substitute for it the phrase, Indolent, Irritable, or Callous ulcer, *complicated by the presence of Varix.*

RECAPITULATION.

Clear and distinct as the divisions of an artificial arrangement appear to us, in nature the effects are mixed and not simple. Although classified, for the sake of convenience, under the predominant types which usually characterize them, ulcers on the leg are seldom met with in the pure form of any one of the three heads specified. Not only are these local distinctive features mingled in various proportions, but with them are blended constitutional peculiarities, each of which claims its due share of attention.

Confining our views more particularly to the former, it is plain that the inherent and substantial source of intractability in this complaint, is the obstruction to free circulation through the sore caused by the dependent position of the part; an obstruction, of course, considerably increased when the veins are varicose. Where great excitability of nerve, or inflammation of the veins exists, the character of morbid sensibility will be superadded: and, as the result of chronic inflammation, or of prolonged congestion of the subjacent vessels, more

or less deposition of lymph will occur around and beneath the sore. The supervention of acute inflammation may, at any time, convert an atonic, irritable, or callous ulcer into an inflammatory, phagedenic, or sloughing sore; but, these accidents overcome, and its irritable and callous features removed, the substantial source of intractability, so frequently alluded to, will still remain in force, and generally outweigh the unassisted efforts of nature to repair the injury.

TREATMENT.

I.—OF ULCERS ON THE LEG, THE INTRACTABILITY OF WHICH IS TRACEABLE TO CONSTITUTIONAL CAUSES.

It must not be inferred that, because I ascribe the *peculiar* intractability of ulcers on the leg to causes of a local nature, and propose to restrict myself chiefly to the details of their local management, I am inclined to under-rate the importance of constitutional treatment. Where constitutional disorder exists, its prejudicial influence over the local affection must be combated before the local remedies can produce any permanent effect. As, however, the medical treatment of such impediments to healthy action should be conducted on the general principle that, in all local maladies, we ought to endeavour to correct any evident derangement in the functions of the various organs of the body, and keep them in a state as nearly as possible approximating to that of health, it will be

unnecessary to do more than touch upon the most prominent points connected with this branch of the subject.

The constitutional sources of intractability already enumerated are disorders of the digestive organs, of the kidneys bladder and urethra, and of the uterine functions; general debility ensuing upon other maladies, or the consequence of insufficient nourishment, bad air, or intemperance; and irritability of the nervous system, original or acquired.

In ulcers of the leg characterized by atony—which constitute so large a majority of these cases—measures which tend to invigorate and give tone to the general health are especially indicated. With this view, the organs of nutrition demand our first attention; sources of irritation, arising from habitual constipation, hepatic obstruction, and improper diet, should be removed, before we can attempt to strengthen this function; but when this is accomplished, caution in the use of purgatives is necessary, purging being rather calculated to retard than forward the progress of indolent ulcers. Tonics may then be administered with great advantage.

In that prostration of the bodily and mental faculties resulting from an addiction to ardent spirits, or in the low, feeble, cachectic state of health

induced by a want of the necessaries of life, and confinement to the unwholesome air of the wretched, ill-ventilated abodes of the destitute lower class in large cities, quinine, in larger doses than ordinary, surpasses all other remedies; in proof of which, the following case, related by Mr. Abernethy,* may be cited:—"There was a young woman in St. Bartholomew's Hospital with an ulcerated leg, which had sometimes been a little better, and at others worse again, during a period of eighteen months. That the disease in this case depended on constitutional causes was rendered evident by her having, during that interval of time, suffered from ulcerated sore throat, and cutaneous eruptions and ulcerations. Her case had been treated in various ways. She had taken decoction of sarsaparilla; used mercury so as slightly to affect the mouth; taken nitric acid and decoction of bark; also large quantities of conium and hyoscyamus, with a view to soothe nervous irritability; and had even tried arsenic;—but all without producing any great or permanent benefit. I showed the case to an old surgeon of a provincial hospital, (Mr. Simmonds, of Manchester,) who said, 'We should in our hospital give her the bark in the largest doses she could get down,

* Lectures on Surgery, p. 119.

even till it nauseated.' She was ordered the sulphate of quinine, and the dose was increased to five or six grains three times a day; and under the administration of this medicine the sores healed rapidly. The medicine being at this time scarce and high priced, she occasionally did not receive her full allowance, when the sores never failed to become deteriorated; so that the necessity for maintaining the full effect of the remedy was made evident. By perseverance in the use of the medicine, however, a permanent recovery was obtained."

In accordance with the general indication of the treatment just laid down, the diet ought to be nutritious rather than spare. As Dr. Underwood quaintly expresses it, "lower than too many like to indulge in, and rather better than some people allow themselves." Porter in moderation is almost always necessary in hospital cases; and in confirmed spirit drinkers, no experienced surgeon would venture to prohibit altogether the accustomed stimulus.

In opposition to the opinion and practice of the earlier writers on ulcers of the legs, who insisted upon the absolute necessity of confining the limb to the horizontal position, Sir Everard Home admits the great importance of air and exercise in their management. But no one has

inculcated this more strenuously than Dr. Underwood; not merely as a means of supporting and improving the general health, but from a conviction that cicatrization, accomplished by rest and position, was seldom so sound and permanent as when effected by methods of treatment which could be employed whilst the patient was taking exercise, and following his ordinary occupations. These views will be discussed more at large when the local treatment of ulcers is under consideration.

It may not always be in our power to fix upon the seat of constitutional disorder, or, indeed, to determine whether any such derangement be actually present. Nevertheless, in cases of long standing which have obstinately resisted all varieties of local treatment,—especially in those which are both indolent and irritable,—its existence may fairly be presumed from the refractory disposition manifested by the sore; and under such circumstances there are certain remedies, resorted to, perhaps, somewhat empirically, which appear to act upon the nerves and capillaries of the part through the constitution, to which we may have recourse with the best effect. Mercurials have long and deservedly enjoyed a high reputation in the treatment of indolent and irritable sores. The Bi-chloride has been a great favourite with many

very successful practitioners, and its beneficial operation is enhanced by combining it with the Essence or Decoction of Sarsaparilla. As an alterative in very irritable ulcers, Sir A. Cooper preferred Calomel and Opium to the Bi-chloride of mercury. They should never, however, be continued long enough to excite salivation.

Opium was brought under the notice of the profession, some years ago, by Mr. Skey,* as a remedy capable of exerting an almost specific power in healing the "chronic or callous ulcer affecting the legs of old persons."

"In many cases," says Mr. Skey, "a very palpable effect is produced by eight drops of the tincture twice a day; but I rarely commence with a less dose than half a grain of the extract night and morning." This dose may be increased, if necessary, up to two grains night and morning, and that without producing the ordinary effect of opium—constipation. "The sensible effects of the medicine," he states, "are a general glow of warmth throughout the body, with a uniform degree of perspiration proportionate to the quantity taken." He believes that it rouses "the dormant energies of local health through the means of the circulating system."

* On a New Mode of Treating Ulcers and Granulating Wounds. 1837.

That Opium, brought into contact with the nerves, in the extreme ramifications of the capillary system, may produce a stimulant effect upon them, and excite both nerves and blood-vessels to healthier action,—thus tending to keep up the animal heat and renovate the powers of the reparative function, exhausted by age or other debilitating causes,—will scarcely be disputed. In this manner, I believe, it operates as a valuable auxiliary to measures bearing more directly upon the local malady; but in treating by this remedy alone the kind of cases indicated by Mr. Skey, I have not met with the same degree of success which attended the employment of Opium in his hands.

In sloughing ulcers, the result of debility, I have found Opium far more serviceable. The following case is a marked instance of its beneficial operation :—

Case I.

Extensive sloughing ulcer on the Leg.

Mr. G—, residing at 54, Gloucester-place, aged 76, was attended by me in May, 1836, for a slight graze on the shin. Being very active and healthy for his age, he made light of the injury, persisted in taking his usual exercise, and left London for a week. On his return, a considerable

slough had formed, which rapidly extended in a belt, three inches in width, round the leg, destroying skin and cellular tissue, and leaving the fascia and muscles bare; another deep slough formed at the heel. At the same time, he suffered to an extreme degree from Prurigo senilis; and it was absolutely necessary to control the irritation arising from this cause, in order to prevent his being rapidly exhausted for want of sleep. At first, twenty drops of laudanum at night enabled him to sleep for some hours; but it soon became requisite to repeat the dose during the night, and sometimes give a third in the course of the day. It not only relieved the Prurigo and procured sleep, but acted as a cordial; and as the bowels were generally relaxed, no inconvenience whatever attended its use.

The leg was enveloped, on the outside of the dressings, in carded wool, at the recommendation of Sir B. Brodie; and the health being carefully supported, the sloughs were at length thrown off, leaving a granulating surface at the bottom of the wound, which slowly rose to the level of the skin; and at the end of October—five months after its outbreak—the whole was soundly cicatrized. The laudanum was continued, occasionally in larger doses, throughout the treatment, and afterwards gradually discontinued. The ultimate healing of

a suppurating surface so extensive, under circumstances in all respects so unpropitious, may, with great probability, be attributed to the sustaining influence of the laudanum, administered for the purpose of procuring sleep.

In the "Lancet" for May 10th, 1851, is a letter by Mr. Tait, in which he advances a similar claim in favour of the Tinct. Cantharidis, in doses of twelve drops three times a day. And I have certainly witnessed an improvement in the aspect of what are termed weak ulcers, during the exhibition of Oxide of Silver in gr. $\frac{1}{3}$ doses three or four times in the twenty-four hours, which I have been strongly inclined to ascribe to the influence of that preparation. Although not so sanguine with regard to the efficacy of these medicines as to rely upon them solely for the cure, I believe them to be serviceable adjuncts to the local treatment; and there can be no sufficient reason why it should not be carried on in conjunction with them.

When we have to treat extremely sensitive sores, Opium must be given to relieve pain, but is somewhat uncertain in its action; a small dose frequently affording complete relief; at other times, doses of three or four grains producing very little effect. Nor can we place greater reliance upon it in cases where the morbid sensibility of the sore is

a consequence of general irritability of the nervous system, which may often be tranquilized by Hyoscyamus, or Conium, when Opium has failed.

As this irritability, however, is, in most instances, a symptom either of derangement of some organ, or of general debility, instead of prescribing for the symptom, measures which are calculated to remedy the disorder, or invigorate the general health, will best relieve it. But although the morbid sensibility of the ulcer may have originated in general irritability of the nervous system, when once it has acquired this habit, it reacts upon the general system, and we shall find it extremely difficult to treat the primary derangement until the local irritability has been subdued by suitable topical remedies.

Upon this point Mr. Abernethy, who has sometimes been reproached with advocating too exclusively the constitutional treatment of local maladies, thus expresses himself:*—"It is not meant by these observations to depreciate the utility of topical applications to diseased sores, but merely to show how much they depend on the state of the health in general; for some of them, which have remained uncorrected by a great variety of local applications, will get well

* Surgical Observations, Part II. p. 135.

under simple dressings, when the state of the constitution is amended.

"It is not, however, to be expected that this will generally happen; for local diseased actions have been excited, are established, and may continue, independently of the cause which produced them. Topical remedies will, under these circumstances, be employed with the greatest advantage. Again,—topical applications are of the highest utility in general practice, because an irritable sore affects the whole constitution, and aggravates and maintains that disorder by which it might have been originally caused. The disorder of the digestive organs cannot, in many instances, be corrected till the fretful state of the local disease is diminished. I may further mention, with relation to this subject, that I have seen patients, who scarcely ever slept, from the pain of the local disease, whose stomachs were greatly disordered, and who had a distressing purging, which could only be controlled by opium, sleep without interruption during the night, regain their appetite, and have their bowels become tranquil and regular, when, after various trials, a dressing has at last been applied which quieted the irritable state of the sore."

Irregularity in the discharge of the uterine

functions is likewise, not unfrequently, a cause of intractability. Menorrhagia, or Leucorrhœa, may suspend healthy action in a sore, in the same manner as any other source of general debility. Whenever this sluggishness is coincident with imperfect menstruation, or a total suppression of the function, and this disorder appears to arise from an evident want of energy of the system generally,—evinced by inability to bear fatigue, acceleration of the pulse and respiration on muscular exertion, tendency to anasarca, and the peculiar complexion of chlorotic subjects,—local treatment will produce little or no impression upon the ulcer, until the derangement of the health is rectified by steel, in one or another of its various forms.

In some of these cases, until the function is restored to its natural course, vicarious menstruation from the surface of the ulcer takes place; and, almost invariably, a periodical foulness of the sore and aggravation of the symptoms occur.

As additional evidence of the mutual relation which exists between the local affection and the general health, and the manner in which they react one upon the other, a "curious case," related by Wiseman, (Book 2, chap. ix.) may be mentioned. An ulcer on the leg, in a young woman suffering from Amenorrhœa, had long resisted

every plan of treatment employed by himself and others, until he succeeded in curing it by means of his laced stocking. The woman's health now improved, and the catamenia speedily returned.

Connected with this part of the subject, also, is the question,—whether the cure of ulcers which have existed for many years, and to which the constitution has become habituated, may not operate injuriously to the health? It is an article of popular belief, that old sores on the extremities act as drains for the removal of impure humours from the system, and that the life of elderly persons not unfrequently falls a sacrifice to their suppression; an opinion confirmed by, if not originating in, the circumstance that ulcers of long standing sometimes dry up spontaneously shortly before death. Camper, B. Bell, and Boyer deny that there is any danger in healing old ulcers; and, with the exception of Mr. Liston, the recorded experience of all the more recent medical writers, who have directed their attention particularly to this class of diseases, is not only opposed to the popular impression, but goes far to prove that, in very many instances, the health is materially benefited by the healing of these sores.

After referring to the opinions, rather emphatically expressed, of Avicenna, Heister, Le Dran,

and other authorities, on the risk thus incurred, "I have ventured," proceeds Dr. Underwood, "to cure ulcers of many years' standing in very old people; and one, many years ago, in a lady upwards of eighty years of age, whom a very eminent surgeon had cautioned against suffering it to be healed; all of whom have since enjoyed good health, and the ulcers have shown no disposition to break out again." (p. 137, note.)

In Mr. Whately's practice, although the ulcers had existed, in some instances, ten, fifteen, and twenty years, in individuals whose ages ranged up to seventy-nine, not only did no evil consequences ensue, but several lived to a great age, and with improved health. Similar statements are made by Mr. Baynton and Sir E. Home. Nevertheless, since in many cases a manifest influence is exerted upon other maladies by these sores,* I make it a rule to inquire into the state of health previous to their outbreak; and if it should distinctly appear that the patient has enjoyed a respite from more serious disorders coincidently with the existence of the ulcer, I should feel some hesitation in attempting its cure.

* "If," says Dr. Colles, "your patient has a thickness in his breathing, and that you discover clearly a tendency to organic disease, and that you set about healing his ulcer, as you may do, you will be, as my old master used to say, his executioner."—Lectures, p. 97.

If, on the other hand, the health has suffered materially in consequence of the local disease, no scruples need be entertained on that score. And where doubt exists, in order to guard against any possible mischief from healing them, it is advisable to continue to pay very close attention to the preservation of the general health; and whenever a tendency to plethora, or any determination of blood to the head, exists, the establishment of an issue in the arm would be but a measure of prudence. Some few instances have come to my knowledge in which, this precaution having been neglected, death has followed within a short period of the cure of the ulcer, under circumstances which have been sufficient to raise a well-grounded suspicion that the *post hoc* may not, in all such cases, have been mistaken for the *propter hoc*.

Instead of opening an issue in the arm, I have sometimes allowed the ulcer on the leg to heal up until reduced to the size of half-a-crown, and have then converted it into an issue by the insertion of six or eight peas, beneath the straps and bandage. Case XVI. is an example of the beneficial operation of this practice, in a gentleman of unhealthy constitution, who had suffered severely for many years with a large and profusely-secreting ulceration. Feeling some misgiving as to the propriety of healing it entirely, a small remnant has been

kept open for the last two years, not only without the slightest inconvenience, but with marked amelioration of his general health.

Before dismissing this important question, I must not omit to mention, that, in several cases of long-existing ulceration, where there has been an abundant sero-purulent discharge from the sore, or (where eczema was present) a copious exudation from the diseased skin, I have observed that the arrest of this flux, as the sore or the skin assumed a healthier character under the action of the bandage, has been followed by nausea, headache, and a sudden attack of diarrhœa. In similar circumstances, therefore, I now invariably prescribe a smart saline purgative for the first two or three days that the bandage is worn, a proceeding which has hitherto entirely obviated any ill consequences which might otherwise have ensued from the suppression of the discharge.

TREATMENT.

II.—OF ULCERS ON THE LEG WHICH ARE RENDERED INTRACTABLE BY LOCAL CAUSES.

If we look back to the past history of the local treatment of ulcers on the leg, we shall find that two tolerably distinct systems of managing them have long prevailed, the main feature of the one being rest in the horizontal position, that of the other pressure or support by bandaging. Under the *first*, however, up to a comparatively recent period, although the necessity of laying up the limb in order to favour their operation was at the same time inculcated, the surgeon's reliance seems to have been chiefly placed on the curative influence exercised upon the ulcer by certain topical applications, which gradually multiplied prodigiously in number, the author of each new suggestion gener-

ally assuming to himself the merit of having discovered a method of cure superior to all others, and appropriate to all varieties of the complaint.

Under the *second*, the dressing applied to the sore was regarded as a point of little or no importance, uniform compression or support of the limb, by means of one or another kind of bandage, being the leading principle on which the treatment was conducted; a practice, it was contended, not only superseding the conflicting claims of the great multiplicity of topical remedies, which proved so embarrassing under the other system, but doing away with the necessity of rest; the cure, in fact, being more permanent than when rest had been strictly enforced.

The extent to which the exaggerated and exclusive claims of topical applications had been pushed in his time, is amusingly commented upon by John Bell in his "Principles of Surgery," vol. i., p. 97:— "It is impossible to be serious," he writes, "while we enumerate the thousand remedies which have been applied to ulcers; not that our disappointment in removing so afflicting a complaint can be matter for ridicule; but the vain boastings of self-sufficient inventors certainly are so. Ulcers have been dressed with precipitate, calomel, alum, vitriol, zinc, verdigris, pulvis sabinæ, and other devilish drugs; they have been powdered with sugar, chalk,

charcoal, asafœtida, and other innocent drugs; they have been plastered with turpentine, balsams, mel mercuriale, decoctions of walnut-leaves in sugar (which Belloste protests to be a medicine so powerful that no ulcer can resist it). . . . . They have been squeezed into good humour by compresses and firm bandaging, strong sticking-plasters, plates of lead upon the shins, sponges, cakes of Paris-plaster, &c., or bladders have been fixed about ulcers full of fixed air, carbonic air, vital air; what is there, indeed, which has not been tried?"

The ridicule, be it remarked, is directed not so much against the remedies themselves, incongruous as the catalogue may appear, as against the contracted views which made each of them a hobby in turn. But that this spirit is not confined to the partisans of one system more than those of the other, nor quite extinct in our own day, we have sufficiently conclusive evidence (without seeking further) in the universal and indiscriminate adoption of Baynton's practice, and rejection of all other methods of treatment, for so long a period; an abuse necessarily leading to the present depreciated estimate of its real value, and reaction in favour of the old treatment by rest, or of new modes of dealing with the malady, some of which have been introduced to our notice with claims

scarcely less exclusive than those animadverted upon by John Bell.

Instead of thus limiting our resources by taking up and advocating any one remedy, or line of practice, to the exclusion of all others, would it not be wiser, when we have to encounter a disease so stubborn and capricious in some of its characteristics, to accept of all means of cure that may be offered, rating them at what they are found to be worth when brought to the test of experience? There are few, perhaps, of these panaceas which may not have done good service in some particular phase of the complaint; and variety in the topical applications employed has been pronounced, by many of the highest practical authorities on the subject, to be an indispensable element of success in its management.

It is true that the statements on this latter point are somewhat contradictory; Sir Everard Home, for instance, exhorting the young surgeon "to spare no pains in storing his mind with as extensive a stock as possible of this kind of knowledge;" while Whately and Baynton,—writers, as far as ulcers on the leg are concerned, at least equally deserving our confidence,—deny its necessity, appealing triumphantly in support of their opinion to the success of their several plans of treatment, in which scarcely any variety was admissible.

A consideration of the various purposes sought to be accomplished by the employment of these topical remedies may tend to reconcile such discrepancies, by showing what is their true sphere of action, and the relative position they ought to hold with regard to both rest and support. The comparative value and expediency of these two principles themselves is, however, a matter of far more essential importance; and our preliminary inquiry into the nature and source of the peculiarities which render these affections so troublesome will, I trust, pave the way for entering fairly into the merits of both questions, and enable us to arrive at some more definite rules of conduct.

The most important practical conclusions to which the premises laid down in that inquiry lead us, are :—

First, that the tendency to atony, or indolence, ought not to be set down as merely characteristic of a species of the complaint, but as its radical distinction; present in every case as the natural result of locality; underlying, as it were, all other causes of obstinacy, constitutional and local; and still operating to retard the cure when they have been surmounted.

And secondly, that this disposition being traceable to over-distention of the capillaries of the sore and its subjacent tissues (the necessary con-

sequence of the gravitation of the blood in the superficial veins, during the dependent position of the lower extremity), the obvious indication to be followed is, that we must endeavour to counteract it—not alone where indolence is the prominent feature but where it is latent, other features so far predominating as to mask its presence—by affording such assistance in *all* cases as will accelerate the flow of blood in the veins, remove the congestion of the capillaries, and keep up a circulation through them sufficiently active, to enable them to carry on successfully the reparative process as soon as all other sources of intractability have been disposed of.

The great point to be determined is, what are the means best calculated for attaining these objects, recollecting that we are called upon not merely to *complete* the cure, but to render it *permanent?* Upon this question, in fact, the whole treatment of ulcers on the leg may be said to hinge; since, in the plurality of cases, the tendency to atony constitutes the chief source of intractability, and there is no variety of the disease in which, sooner or later, it will not have to be encountered. To it, therefore, our first and largest share of consideration is fairly due.

TREATMENT.

I.—LOCAL TREATMENT OF INDOLENT ULCERS, AND OF THOSE COMPLICATED BY THE PRESENCE OF VARIX.

In a healthy vigorous person, nature will, in most instances, speedily originate granulation under any form of simple dressing, if the limb be but placed in an elevated position to take off the superincumbent pressure upon the vessels of the sore; although it seldom progresses actively unless we have recourse, at the same time, to some of those topical applications, drawn mostly from the astringent class of medicines, which excite tonic contraction of the dilated capillaries. Granulation once set on foot, if the stimulus be varied from time to time, it will very commonly render the vessels capable of sustaining the natural effort until cicatrization is completed,—provided the leg be kept throughout in the horizontal position. Nevertheless, under the most favourable circum-

stances, ulcers thus healed are very liable to break out again when the patient begins to use the limb.

But the great difficulty is to induce patients to lay up the leg entirely; in the first place, because those who could do so are very reluctant to submit to the irksomeness and inconvenience of such a measure, as long as they retain the power of locomotion; and, in the second, because the majority of sufferers from this affection are so wholly dependent upon their bodily exertions for daily bread, that unless they can obtain admission into the wards of a hospital, it is in their case totally out of the question. The number treated in hospitals, however, compared with those who are unavoidably rejected, amounts, as I have already shown, * to a very small proportion of the applicants for admission, for the very sufficient reason that the latter would, if taken in, occupy beds required for those who were labouring under more serious maladies, in which, perhaps, life itself may be at stake.

This averseness to confinement in one class of patients, and impossibility of indulging in rest in the other, coupled with the tendency to relapse even when rest had been strictly enforced, has led to the trial of other methods, founded upon a principle, not only more uniformly applicable, but more

* Introductory Observations, p. 2.

efficient than that of rest; whereby the mechanical obstacle to the capillary circulation, arising from the dependent position of the part, may, in general, be overcome, and the reparative process be carried on at least as successfully, without confining the patient or depriving him of the use of the limb. I need scarcely add that the means by which those ends are attained is careful bandaging; the support thus given preventing accumulation in the veins, enabling the capillaries to make and sustain the effort necessary to repair the injury, and afterwards preserving the newly cicatrized surface from the danger of a relapse.

The practical efficacy of this part of the treatment has been so long and so fully established, that it may be thought superfluous to dwell upon its merits; but a disposition has been manifested of late to question its utility, and revive the old opinion of the supreme importance of rest, even in the management of ulcers of a simply indolent character.* As, moreover, one of the chief aims of the following pages is to extend it to cases in which it has hitherto been considered as inapplicable, or, at any rate, in which its application has not been very successful, a brief survey of the evidence in its

* "As regards ulcers," says Mr. Liston, "the paramount advantage of an elevated position of the affected part must be sufficiently obvious."—Med. Chir. Trans., vol. xxiii. p. 91.

favour, and the principles upon which its beneficial operation depends, will neither be unnecessary, nor, perhaps, altogether unprofitable.

Various methods of affording the requisite support have been suggested. Wiseman recommended a lacing stocking for the purpose, doubtless because it could be more effectively applied by the patient than a roller; but rollers of flannel, or calico, are now justly preferred, their careful application by the surgeon himself being very properly insisted upon by all recent authorities on the subject. This is an item of the treatment, the importance of which is not always duly appreciated; failure or success depending much more frequently on the manner in which the bandaging is performed, than upon any other particular.

The several writers who advocated this practice, from Wiseman to Mr. Baynton, speak generally of *tight* bandaging as the mode by which they effected a cure, and ascribe their success to the *pressure* thus exercised. Sir Everard Home pointed out the mischief arising from the indiscriminate application of compression; and his observation of the evils resulting from their abuse, probably led him to give a less prominent position to bandages in the treatment of ulcers of the leg than they really deserve. Sir Everard's objections, however, appear to be mainly levelled at *tight* bandaging; and, in

cases attended by inflammation, or by a high degree of morbid sensibility, pressure would undoubtedly prove most injurious. In the management of varicose ulcers, he admits that it is an auxiliary of the greatest value, although not adapted to every case of this nature; "as, however," he concludes, "those patients who cannot bear bandaging at all are but few, they must be rather looked upon as exceptions, and uncommon cases, than as affording any argument against the general treatment."*

In the preceding section I glanced at the very decided opinion advanced by Dr. Underwood† as to the greater permanency of the cures effected under a system of regulated exercise, than when the patient is confined to the horizontal position. He ranks the means, for accomplishing the intentions necessary to the cure of these cases, under four principal heads—External applications, Bandage, Exercise, Diet and Medicines. After remarking "how greatly prejudicial it must be to general health, for a person accustomed to labour and exercise to be confined for a length of time to an inactive state, and the greatest part of it in an almost horizontal position," he exclaims:—"Has

* Practical Observations on Ulcers of the Legs, p. 286.

† Treatise upon Ulcers of the Legs.

it the most remote tendency to perfect the cure; I mean, to make such a cure as shall stand?" (p. 79). A question which he thus resolves in another part of his work:—"The frequency, I had almost said the constancy, with which large and old ulcers on the legs are found to return, is greatly owing to their having been healed in the horizontal position of the limb;" (p. 53)—which statement the experience of Messrs. Whately and Baynton, and Sir E. Home, in a great measure corroborates, although the question relates not merely to the advantages or disadvantages of the cure by position, but to the comparative efficacy of the treatment with or without the bandage.

By Mr. Baynton, and Mr. Whately, (who treads closely in the steps of Dr. Underwood,) the bandage is regarded as not merely accessory, but primely instrumental to the cure. They claim for their respective methods a superiority over the old system of confining the limb to the horizontal position, affirming that ulcers of the leg heal *more* speedily and soundly under the treatment laid down by them, whilst the patients are taking exercise, than when absolute rest is enforced. The modes of bandaging employed by these gentlemen are too well known to require a detailed description here; of the two, Mr. Baynton's proceeding has been more universally adopted, and

may, in fact, be said to have superseded that of Mr. Whately.

Mr. Baynton ascribed the greater success attending his plan of treatment chiefly to the approximation of the opposite edges of an ulcer, effected by the agency of adhesive strapping; in confirmation of which he cites the smaller size and greater soundness of the cicatrix when it has been employed. Mr. Whateley denies that a smaller cicatrix is produced by Mr. Baynton's bandage than by his own proceeding; and one of Mr. Baynton's own correspondents, Mr. Sandford, of Worcester, in a letter appended to the second edition of his Treatise, states that he sometimes succeeded still better when the adhesive plaster was spread only at each end of the straps, and not over the centre, and consequently had never been in contact with the ulcer, or its edges.

A little consideration will show that, although it may approximate the margins of small, narrow ulcers, secreting scantily, in those of greater extent and more severe character, its beneficial operation, in the manner and with the object attributed to it by Mr. Baynton, has been much overrated.

In the first place, the resin contained in adhesive plaster—as Mr. Baynton himself acknowledges, and general experience has confirmed—

proves, in many cases, too irritating. In contact with a healthy ulcer, its secretions are often found to change for the worse; a thin, acrid sanies is poured forth freely, excoriating the surface of the skin for some distance round the ulcer, and completely destroying the adhesion of the straps.

With the view of remedying these disadvantages, other forms of plaster have been substituted for the adhesive. Lead plaster alone, a mixture of Emplast. Thuris and Empl. Saponis, or the Empl. Saponis simply, have been recommended, any one of which is free from the objections urged against the resin plaster. The smallest quantity of secretion, however, from a perfectly healthy ulcer, is quite sufficient to prevent adhesion near its edges. But if this separation be not effected by the discharge from the sore, the constant affusion of cold water counselled by Mr. Baynton must speedily accomplish it; so that whatever modification of his treatment may be adopted, whatever kind of strapping employed, within a very short time of its application, its adhesion to the skin near the sore will be more or less loosened, and its agency limited to the support or pressure afforded by it. To this support, (excepting in those cases where its stimulating effects may be brought into play beneficially upon an atonic or callous ulcer),—as a substitute for the

lost skin, and as a means of enabling the vessels of the granulating surface to bear that moderate exertion of the muscles, by which the circulation in the veins is so materially promoted,—its salutary operation, in conjuuction with the bandage, is mainly to be attributed; and to the circumstance that the new structure is thus habituated, throughout the reparative process, to exercise with the limb in the dependent posture, is, doubtless, owing the greater permanency of the cure under the influence of bandaging.

In corroboration of this view of the mode of operation of the strapping in Mr. Baynton's plan of treatment, in lieu of plasters, many surgeons attain an almost equal degree of succees by employing strips of linen, or calico, spead with Pott's soap cerate, or Kirkland's neutral cerate. Their adhesion to the leg beneath the bandage is sufficient to give a considerable amount of support; but no approximation of the edges of the ulcer can be effected by them.

The same remarks do not apply to the plan of treatment followed by both Underwood and Whately, who recommend flannel bandages as the best mode of giving the requisite support. Nevertheless, suggested for the management of ulcers of the leg without confinement, one serious obstacle exists to its general adoption—namely,

the discomfort sustained by a patient taking exercise with his leg enveloped in a heating flannel roller. Flannel may be the best material for bandaging the legs of elderly persons, with whom it is an object to prevent the animal heat from sinking below the proper standard. For the same reason, it may be often beneficially resorted to with other subjects, during the colder seasons; but under ordinary circumstances, where elevation of temperature forms one of the most prominent symptoms of the case, the accumulation of heat it occasions is often insupportable, and must be injurious to the well-being of the ulcer.

Since, then, in the treatment of indolent ulcers by the bandage, we are to aim at giving support rather than compression, is any high degree ot pressure, it may be asked, invariably to be avoided? —There are, unquestionably, cases in which *tight* bandaging will be found extremely serviceable, to accomplish certain objects, but they must be regarded as exceptions to the general rule. In insensible ulcers, presenting a fungous surface, and in the latter stages of a cicatrizing sore, when the granulations manifest a tendency to rise above the surface of the surrounding skin, it is far more effectual than escharotics in keeping down their inordinate growth and promoting sound cicatriza-

tion. In callous ulcers, too, compression is very advantageously employed for the attainment of another end, which will presently come under consideration. In all cases, however, where it is had recourse to with such views, the strapping ought not to be applied in the partial manner recommended by Mr. Baynton, but from the toes upwards under the improved form practised by the late Mr. Scott, of Bromley, as described in the work of Mr. John Scott.*

But whether plaster strapping be adopted as a medium for support or compression, its universal and indiscriminate application to all varieties of ulcer has naturally led, as I before remarked, to a depreciated estimate of its value; and although its abuse by no means invalidates the evidence in favour both of the practice and of the principle on which it ought to be conducted, afforded by the accumulated experience of half a century, its most steadfast adherents will scarcely deny that serious drawbacks from its utility exist.

1st.—It is totally inadmissible in those extreme cases of irritable ulcer where the morbid sensibility is so acute that no degree of pressure can be borne, until by suitable measures it has been removed, or, at any rate, considerably mitigated.

* Surgical Observations, &c.

2nd.—There are other varieties of chronic ulcer,—rare, certainly, and giving no indications of their refractory nature beforehand,— in which, by no skill or care can the sore be brought to heal under the operation of the strapping. And, 3rd.—in ulcers furnishing a very copious discharge, and, *à fortiori*, when that discharge is of an acrid character, the plaster strapping, whatever may be its composition, being impermeable, diffuses it over the sound skin in the neighbourhood of the sore, thus frequently giving rise to very troublesome erythematous inflammation and excoriation, retarding its cure if it does not actually increase the dimensions of the ulcer. Under similar circumstances, unctuous dressings are likewise very apt to produce the same vexatious consequences.

Instances are not unfrequent of severe mischief ensuing from the partial or careless application of plaster strapping; and the danger is, of course, enhanced in proportion to the degree of tightness with which it is applied. Two have come under my own cognizance, in which the patients (men of rank, in a position to command the first skill and attention), nearly lost their lives from this cause. The following cases are examples of the ill effects very commonly resulting from its use when put on with the utmost care.

Severe inflammation of the skin produced by plaster strapping.

Case II.—Fanny Ball, ætat. 60, met with an accident to the right leg in the summer of 1850, which left an ulcer two inches above the inner ancle. She was for more than three months an out-patient of St. George's Hospital, but, as the sore did not mend, the limb was at last strapped with plaster from the toes to the knee. It gave her most acute pain, which she endured for two days; but on the third, she stated, the agony became so intolerable that she had a fit, when she took off the strapping, and found the whole of the leg highly inflamed and swollen. She was confined to her bed, from the time the strapping was put on, for more than a month, and had two fits after its removal. The skin, from the toes to the middle of the leg, was attacked with Eczema. Bladders formed every two or three days, from which a copious discharge flowed; the ulcer increased considerably in size, and her health suffered seriously. For months after she was able to leave her bed, she was obliged to use crutches; and when I saw her, she was still so feeble that I advised her to avail herself at once of an opportunity which had just

offered of going to the seaside, as the best chance of recruiting her strength, and improving the state of the leg.

Case III.—Jane Smith, æt. 34, became a patient at the Hospital for Diseases of the Skin,* April 21st, 1852, for the cure of an ulcer on the leg, surrounded for some distance with eczematous excoriation. The history she gave was that she had been troubled with Varix of this limb for fifteen years, and that the ulcer had formed on the outside of the leg in consequence of a graze received six months previously. It was strapped with plaster at Guy's Hospital, which occasioned so much pain that she was compelled to remove it on the day following, when she found the skin half way up the leg inflamed and blistered, and the sore considerably enlarged. The inflammation had continued unabated up to the above mentioned date, attended by profuse watery discharge, and the constant formation of crusts and scales.

June 17th.—Under the treatment I shall presently describe, the sore had healed soundly, and

* To my friend Mr. Startin my acknowledgments are due, for the opportunities he has afforded me of testing the effects of a variety of topical applications, upon the numerous cases treated at this excellent institution.

the Eczema had nearly disappeared. Since the leg had been supported by the wet straps and bandage, she had felt perfectly comfortable, and the inflammation had been steadily declining, although much on foot. On the 16th she had walked with ease from Norwood.

Another patient, with a deep inflamed ulcer above and behind the outer ancle of the right leg, originating in a kick received seventeen years before, stated that whenever the leg had been strapped with plaster it had given her great pain, and that the surface of the sore always turned green. On four several occasions when the ulcer had improved under rest in various hospitals, attempts had been made to complete the cure by strapping, but it had invariably got worse immediately.

Treated by leeches to its surface, and the same bandage as in the last case, the sore was perfectly cicatrized in six weeks. She felt no pain whatever from the application of the wet strapping.

Similar accidents have, doubtless, occurred in the practice of many of my readers; and unfortunately they are not confined to the treatment of ulcers. Extensive cutaneous inflammation and ulceration sometimes follow the employment of plaster strapping, when no breach of surface existed previously. In the autumn of 1851, I was con-

sulted by a lady whose left leg was in a most painful state of eczematous excoriation from the instep to the knee, in consequence of the limb having been strapped with Empl. Plumbi, six months before, by one of the first surgeons in London, for œdema. And I have, at this time (1853) under my care, a patient with a deep and extremely sensitive ulcer on the inside of the leg, nearly six inches in length, and three in breadth, which originated in the application, eleven months ago, of plaster strapping for the relief of Varix, accompanied by swelling and an obstinate rash. The inflammation excited in twenty-four hours, necessitated its removal, and nearly the whole of the skin from the inside of the leg came away, she told me, with the plaster.

In addition to these objections, which, however well founded they may be, apply, not so much to the treatment of chronic ulcers generally by Baynton's method, as to its employment in certain conditions of an ulcer, other disadvantages are alleged or felt. The material is expensive where economy is an object, particularly when the leg is strapped from the toes upward, according to the improvement of Baynton's plan introduced by Scott. As neither ointments nor lotions are compatible with the plaster strapping, we are pre-

cluded from the use of many formulæ which are found effective against refractory ulcers of other parts. But perhaps no cause has more contributed to the present disuse of the strapping and bandage, as far as the labouring classes of London are concerned,—and that they are much less frequently resorted to than formerly I meet with almost daily proofs,—than the time and trouble they require, and the absolute necessity of renewing them at stated periods; twenty-four hours' neglect on the part of surgeon or patient, or a single unskilful application of the bandage, being often sufficient to undo all that has been gained by a month's care and attention.

Yet unless more solid objections than these can be brought against the *principle* on which this treatment is based, I cannot admit that we have adequate grounds for rejecting the advantages it offers in favour of any proceeding demanding rest for its completion. And, with respect to the mode in which the principle is carried into effect, all these drawbacks and objections, with the exception of the last referred to, are met and obviated by the modification of Baynton's method, which I formerly proposed as a substitute for it; and to which, after a few remarks on the subject of dressings, I shall call attention.

Dressings suitable for Indolent Ulcers.—A microscopic examination of the capillary circulation in an ulcer complicated by Varix,—which is but an aggravated type of the indolent species,—has shown us that the chief local source of intractability is a congested state of these vessels as long as the erect attitude is maintained; tending to produce, in the granulations, an undue preponderance of vascularity over the deposition of new matter. Rest, in the horizontal position, or the support of a bandage, will in a great measure counteract this morbid disposition, and place an ulcer on the leg in nearly the same condition for healing as a suppurating surface upon any other part of the body. Before an indolent habit is established and the secretions have become depraved, granulation and cicatrization will proceed favourably under the simplest topical applications. All that is required of them in these circumstances is, that they shall be perfectly unirritating *per se*, calculated to protect the sore from external sources of irritation, and prevent its surface becoming dry during the intervals between the dressings.

The difficulty of devising a dressing capable of fulfilling these several indications completely, has been felt by all who have paid attention to the subject. Mild unctuous substances, which are commonly employed, are objected to, for their

liability to turn rancid, by Sir E. Home; who suggests, as the most soothing application, fresh cream, if it can be obtained, or, in lieu of it, artificial cold cream of the simplest manufacture. Mr. Whately is evidently no great advocate for unctuous dressings, although he employed hog's lard, Spermaceti ointment, and Calamine cerate, as the best materials with which he was acquainted for preventing evaporation, and consequently the formation of dry crusts at the edges of the ulcer. To ensure this object, he filled the wound with successive strata of lint spread with the ointment, covering them with a large pledget of tow likewise embued with it, and enveloping the whole with compresses of linen, over which his flannel bandage was applied.

There is, however, another objection to ointments, besides their proneness to turn rancid; unctuous dressings never absorb the discharge from the surface of the ulcer. As long as the bandage is properly applied, and secretion is small in quantity and healthy in quality, the most rancid dressings may be, and frequently are, made use of with perfect impunity; but when it becomes profuse, and of an acrid nature, the freshest, blandest ointments may prove mischievous, by aiding its diffusion over the surrounding skin, and thus exciting extensive inflammation, very com-

monly running on into superficial ulceration. At best, they are filthy applications, and require the greatest attention to cleanliness, to prevent their combining with the discharge, and forming crusts round the ulcer, beneath which fresh ulceration is often developed.

Mr. Baynton, who dwells especially on the high degree of heat present in the majority of his cases, inveighs strongly against "those non-conducting substances, improperly termed cooling ointments," and presages their neglect and disuse when experience shall have established the superiority of his method of treatment. Applied to irritable ulcers, however, or even to insensible sores of large size, attended by much discharge, Mr. Baynton's treatment would often prove more injurious than that objected to by him, were it not for an adjunct to the adhesive strapping employed by him,—"a remedy of singular utility," he remarks, "in almost every case of local inflammation,"—the free application, to wit, of cold water.

Fixing his attention on the high temperature of the part, as one of the chief symptoms against which the treatment should be directed, he hit upon this very simple method of keeping the surface of the sore moist, and, at the same time, cool. Its importance is almost as much insisted on by Mr. Baynton as that of the strapping; and a

perusal of the cases reported by him will show that, in very many of them, to the cold affusion little short of an equal share in the success was owing.

In his second edition, Mr. Baynton appears to be in some alarm lest too great a proportion of the merit due to his method of treatment should be imputed to the auxiliary, "the mere application of cold water;" and he hastens to assure his readers that his "later experience has proved that in some cases a part of those means, and what he formerly deemed an essential part (alluding to the cold affusion), may be dispensed with."

Mr. Baynton's correspondent, Mr. Sandford, in the letter already referred to, seems to be of opinion, that, of the two, the adhesive plaster may be better dispensed with; since he states that he sometimes met with greater success where its omission at the middle of the strap allowed the water to come into more immediate contact with the ulcer. His patients, too,—as an incidental remark (at page 80 of his work) shows,—judging no doubt, by the relief it gave, regarded the water as mainly instrumental in effecting the cure.

Some rather curious evidence, bearing indirectly upon this question, will be found in an article by M. Parent Duchatelet, in the "Annales d'Hygiène Publique," T. iii. An opinion had

long been prevalent, even among the best informed of the French surgeons, that individuals, whose legs were daily plunged in water for many hours, were exceedingly liable to atonic ulcers.

The class, deemed most worthy of commiseration, was that of the labourers occupied in breaking up the wood rafts conveyed down the Seine, termed "débardeurs," who, with the "déchireurs," or breakers up of old boats, amount to little short of 700 men. So strong was the public impression of the injurious nature of these employments,—which require that those who follow them should remain immersed to the waist from morning till evening, during six months of the year,—that a prize of 1500 francs had been offered by the "Société d'encouragement pour l'industrie nationale," for the invention of a machine for landing the wood without exposing the workmen to this risk. M. Parent Duchatelet determined to ascertain how far the opinion was well founded;—first, by inquiry among the inspectors of the ports of the Seine, and the superintendents of the workmen;—secondly, by personally examining and questioning the men themselves. The former affirmed without hesitation that ulcers on the legs were unknown among the men under their inspection. Wounds and injuries were of daily occurrence; but it was surprising how rapidly they

healed, seldom obliging them to suspend their labours in the water. Out of 670 workmen examined, only one case of atonic ulcer was met with, and that was in a confirmed drunkard. So far from their lower extremities being varicose, swollen, or œdematous, they were rather remarkable for their dryness and emaciation. The conclusion, accordingly, at which M. Parent Duchatelet arrived was, that the opinion, so universally entertained, originated in "pure supposition." In perfect accordance with the facts collected, he might indeed have gone farther, and affirmed not only that constant immersion in cold water did not predispose to ulceration, but that it appeared to counteract the natural tendency of every abrasion of surface on the lower extremity to degenerate into a chronic ulcer.

I have dwelt more particularly upon this adjunct to Mr. Baynton's treatment, because, since the introduction of water dressing, it has been extended to the management of indolent ulcers of the leg; and many surgeons now employ this simple topical application and a bandage in preference to the ointments formerly in vogue.

Water dressing is as bland and innoxious as Sir E. Home's suggestion, fresh cream, and possesses the advantage of being renewed much more

readily.* At the same time that it keeps the surface of the ulcer, and the skin surrounding it, moist, it is capable of absorbing that redundancy of secretion which the mildest oleaginous dressing has a propensity to diffuse injuriously.

Its qualities, however, are not merely negative, since it likewise enables us to avail ourselves of the operation of temperature upon those functions of the animal economy over which it is found to exercise a powerful influence. Cold, for instance, one of the simplest means of exciting vascular contractility, may thus be applied directly to the ulcer, for the purpose of counteracting the congestion of its vessels, and maintaining their tone at that point which will enable them to accomplish the extraordinary effort required of them.

But if we rely for the completion of the cure solely on the agency of cold water dressing, in conjunction with either rest or support, a time will arrive when the activity of the reparative function appears to be exhausted, and cicatrization will be retarded, if not wholly suspended.

Dr. Underwood, Sir E. Home, and others,†

* Glycerine added to water (in the proportion of ℥iv. or ℥vi. to ℥viii.), by its property of retaining moisture for a great length of time, prevents the wet lint drying so soon as when water alone is employed.

† "Necesse quoque est varia adesse medicamenta, viribus pariter et virium gradibus distincta."—Ambrose Paré, cap. ix. lib. 12.

have pointed attention to the circumstance that variety in the local remedies is indispensable to the management of ulcers of the leg; however favourable the progress of the case on the first application of any given remedy, its influence soon declines, and a change becomes necessary to keep up the flagging energy of the part. Still we are to be guided by the same principle on which the beneficial operation of cold is grounded; the tone of the vessels must be sustained by recourse to more powerful astringents; and for changes which have this purpose in view, water dressing is especially adapted. Nothing is more easy than to dip the compress of lint, used in water dressing, into a solution of Sulphate of copper, Sulphate of zinc, Nitrate of silver, Chloride of lime, or into a lotion of Dilute Nitric acid, or of Creasote, the strength of any of which preparations may be varied to meet the requirements of the case.

The following formulæ (from the Pharmacopœia of the Hospital for Cutaneous Diseases) will be found eminently suitable for dressing sluggish ulcers :—

Lotio Rubra.

℞ Hydrarg. Bichlorid. . . . gr. x.
Hydrarg. Bisulphuret. . . . gr. v.
Creasoti, ... gtt. x. ad. xx.
Aquæ Destillat. . . . . ℥viii. M.

The proportions for the simple Creasote lotion are from gtt. ij. to gtt. v. in an ounce of water.

Should the aspect of the sore lead to the belief that alterative topical remedies would prove beneficial, black wash, or a weak solution of the Bichloride of mercury—one grain to an ounce of lime-water—may be employed in the same manner; or, the favourite stimulus of Wiseman and Dr. Underwood, red precipitate, may be sprinkled over the surface of the sore, in addition to the water dressing. But whenever this preparation is applied in substance, it should be used very sparingly, or the increased secretion which it excites may diffuse it over the surrounding skin and produce excoriation.

All risk of this annoyance will be avoided by dressing with lint, upon which a combination of red precipitate with the Lotio Rubra in the undermentioned proportions has been poured:—

Lotio Rubra Fortior.

℞ Lotion. Rubræ . . . . . ℥i.
Hydrarg. Nitrico-Oxyd. Lævigat . gr. xx. M.

In the early management of very deep ulcers, I have found it requisite to modify the water dressing as follows:—Unless the cavity be filled up to the level of the surrounding skin, and its surface participate in the support given to the rest

of the limb, granulations rise very slowly from the depth of the sore. Successive layers of lint, according to Mr. Whately's practice, or scraped lint —the *charpie rapée* of French surgeons—were not, I found, well adapted either to absorb the discharge, or to imbibe the water and convey it freely to the deeper portions of the surface; in fact, such a mass soon became as impenetrable as an unctuous dressing.

Instead of lint, therefore, in such circumstances, I make use of soft sponge, torn up into very small shreds, and soaked in water, or in some astringent lotion; these are dropped lightly into the ulcer, and covered with a single layer of lint, over which the bandage is carried, as in shallow sores. Gentle support being thus conveyed to the entire surface, and tone communicated to the minute vessels, granulations spring up uniformly and vigorously, and fill the hollow of the ulcer, often with surprising rapidity, of which Case XX. is an example. The sponge acts, as far as its compressing power is concerned, on the same principle as the wax dressing poured into deep ulcers, in the manner suggested by the late Mr. Stafford. According to my experience, however, it is not only a more convenient mode of effecting the same object, but accomplishes it more speedily and completely.

Towards the conclusion of the case escharotics

are generally required, to repress exuberant granulations, and prepare them for the skinning process. On this point Sir E. Home judiciously observes, that it is better to prevent the granulations rising above the surface of the surrounding skin, by an early recourse to remedies which will fulfil that object; increased pressure being regarded by him as one of the most effectual means of accomplishing this. Without impugning the value of Nitrate of silver as a convenient means of destroying them when they have been allowed to rise too high, he dwells strongly on the advantage derived from occasionally dusting the sore with powdered rhubarb to check their morbid growth betimes. The addition of a little pounded sugar, an old popular escharotic, will very materially increase its efficacy.

There is yet another salutary measure, the importance of which—more particularly in connexion with the use of aqueous dressings—can scarcely be over-rated. As a preparation for all other local treatment, the skin for some distance round the sore should always be carefully cleansed with mild soap and warm water. This is a matter so seldom properly attended to, that a first inspection of old cases of "bad leg," especially when unctuous dressings have been long used, would almost tempt one to imagine that the preservation

of the scales, crusts, and sordes, with which the surrounding skin is too often allowed to become thickly coated (even in patients of the better classes of society), was really regarded as essentially conducive to the cure of the ulcer.

Construction of the Bandage.—The sore being dressed with a piece of lint or soft linen cut to its shape and dimensions, and dipped in cold water, or in one of the lotions just specified, the limb is to be strapped with wet bands of linen or calico, precisely in the same manner as Messrs. Baynton and Scott applied adhesive plaster. The bands for this purpose should be from two to three inches in width, and from twelve to sixteen or eighteen in length; stout enough to prevent them tearing easily, but not too thick. Strips of coarse Mull muslin, indeed, are preferable in many cases to either linen or calico. Following Mr. Scott's practice, the middle of one of the shorter and narrower of these bands, previously soaked in water, is adjusted a little above the heel, whence the two ends are brought forward over the ankles, drawn rather tightly, and crossed upon the instep. The middle of another is placed beneath the sole of the foot, its extremities brought up firmly over the instep, and laid down smoothly one upon the other. A third is applied, like the first, from behind forwards, but a little higher; and thus,

ascending the leg, the process is repeated with the rest of the bands, each one in succession overlapping the upper half of that below it, until the limb is firmly and evenly cased to the knee, or, at any rate, to a point several inches above the seat of the ulcer.

Unless, however, much tendency to œdema be present, the ulcer be complicated by Varix, or a higher decree of compression than that requisite for giving support be thought expedient, it is unnecessary to strap the limb to such an extent. In ordinary cases, three or four straps, according to Baynton's original plan, are all that will be required. Over them a calico roller is applied, the greatest attention being paid to its equable adjustment, so that the pressure be distributed evenly over the entire surface. At the small of the leg, and round the ancle, in œdematous limbs, the straps and roller are apt to fall into plaits, which furrow and gall the skin. To guard against this inconvenience, the hollows round the malleoli should be filled up by compresses of wet lint, and one turn of the roller carried under the heel.

That part of the bandage over the ulcer should be moistened from time to time with cold water containing Glycerine, or with Goulard's lotion. The frequency with which the cold affusion is practised must be regulated by the temperature

of the part, and the state of the patient's feelings; heat, uneasiness, and irritability, being at once relieved by it. The age and temperament of the patient, as well as the season of the year, ought also to be taken into consideration; some caution being necessary to avoid the application of too low a temperature,—not alone to prevent the extreme consequences which may ensue, the extinction of all vitality in the newly formed structure, but to guard against the vitality being reduced to a degree incompatible with vigorous reparative action. Evaporation should, therefore, in many cases, be controlled, by enveloping the part of the limb affected in a sheet of oiled silk. In proportion as the ulcer advances towards cicatrization, the affusion is required much less frequently, and in the last stage of the cure (excepting as a prelude to the removal of the dressings), it may often be altogether dispensed with.

If the ulcer secretes abundantly, the dressing must be repeated daily, although the wet lint will absorb much of the discharge. Very shortly, however, under the action of cold and other astringents, loose, shining, semi-transparent granulations become compact and red; and a thin and copious secretion diminishes in quantity and improves in quality, rendering a daily renewal of the dressings quite unnecessary; and, after a time,

this necessity becomes still more rare. In several of the cases hereafter recorded, an interval of three, four, or even five days, sometimes elapsed between each dressing, not only without any interruption to the onward progress of the ulcer, but to its manifest acceleration.

No one who has not tried this mode of bandaging can form an estimate of the power of adhesion possessed by the wet strapping, or the amount of equable support it is capable of affording. In these respects I have found its action in no degree inferior to that of plaster, at the same time that the softness of the material* allows of its closer adaptation to the inequalities of the limb, and precludes all risk of cutting or excoriation. The wet straps are equally serviceable in compressing the bulk of the soft parts before the application of the roller, and they give the latter a much firmer hold than it can take of the bare skin, or even of plaster, thus materially diminishing the chance of the bandage slipping. Their greater permeability, again, admits of the more effective use of lotions; and their cheapness, when compared with diachylon, or any other kind of plaster, is no slight recommendation.

* A gentleman, whose leg had been strapped by Sir B. Brodie, for the cure of a varicose ulcer, remarked to me, that "the plaster felt like an iron boot upon the leg, while the wet strapping permitted the free use of the limb."

Under this plan of treatment, in which the advantages of efficient support are conjoined with those derived from astringent and alterative topical remedies, I am fully satisfied that granulation and cicatrization, in a large majority of indolent ulcers on the leg of long standing, even when attended with a high degree of morbid sensibility, will proceed more favourably and expeditiously, and occasion less inconvenience to the patient, than under any other method whatever. In the following very aggravated case it proved successful after plaster strapping, applied by most skilful hands, had failed more than once :—

Case IV.—Mr. L., ætat. 48, a cabinet-maker, who had formerly been a ship's carpenter, applied to me Feb. 6, 1858, with a large and deep ulcer on the shin and inside of the right leg, at the bottom of which two blackened portions of carious bone lay embedded. The skin around the ulcer was inflamed, thickened, and rugose, and the dressings were soaked with an offensive sero-purulent discharge. He stated that, in 1848, he was thrown by a lurch of the ship, with such force against the tiller as to fracture the right femur near the trochanter, and splinter the sharp ridges of both tibiæ. The fractured femur united, with shortening, in hospital at St. Michael's, but the wounds

on the shin never healed, and exfoliations took place from them from time to time. In 1850, his sufferings and exhaustion were so great that he came up from Sheerness to one of the London hospitals, and underwent amputation of the left leg, fruitless attempts to cure the ulcer on the right leg being made during his confinement. In 1854—having previously gone through a long course of plaster strapping in the Dreadnought with no better success—he once more became a patient of the same hospital where his leg had been amputated; several fragments of carious bone were removed, and the limb was again strapped for four months with plaster from the toes to the knee without effect, although he was confined to his bed the whole time. After this, despairing of a cure, he had abandoned all surgical treatment until his visit to me.

Feb. 6, 1858.—When I first saw him, he was in a state of extreme prostration, with an anxious countenance, foul tongue, total loss of appetite, night sweats, and enduring so much pain, that, to use his own words, "he did not know what it was to sleep, not having had one hour's rest for the last seven or eight months."

I blistered the rugged circumference of the sore, and dressed its surface with diluted Cerat. Resinæ beneath the wet straps and bandage, directing the

free use of warm affusion. Prescribed Dilute Sulphuric Acid, Cod Liver Oil, and a generous diet.

Feb. 8.—Countenance and tongue much improved. Reported that he was quite free from pain, and had enjoyed "a couple of tidy nights' rest." Wound suppurating healthily, and filling up with granulations.

Feb. 17.—Health greatly changed for the better. Sleep sound, appetite excellent. Ulcer less than half its original dimensions; the two pieces of carious bone being almost buried in exuberant granulations.

Feb. 26.—Feeling the larger portion of dead bone loose, I seized it with the forceps and extracted it from its bed. The smaller scale of bone was afterwards absorbed, and the ulcer gradually closed up; when, on the 25th of March, the sore being all but healed, he discontinued his attendance, and I did not see him again until May 26th, on which day he returned with a considerable increase of ulceration, in consequence of a severe attack of diarrhœa. He confessed that he had purposely prevented it healing, having been told that its cure would be fatal. I endeavoured to root out this impression, and urged him to allow it to be perfectly healed; but, on the 8th of June, when it was again reduced to the size of a shilling, he went off a second time, and I have recently

heard that he has kept up a small suppurating surface, although with some difficulty, to the present time (March, 1859), experiencing no annoyance whatever from it, leading a very active life, and enjoying robust health.

Nevertheless,—having myself formerly employed Baynton's method largely,—I am, and always have been, perfectly ready to admit, that when a sore has been reduced within certain limits, and healthy secretion has been established,—when, in short, it has been brought into such a condition that plaster strapping can effectively approximate its opposite margins, — a recourse to that material will often considerably expedite the cure. On the other hand, its beneficial influence over large ulcers will, precisely as happens with all other local measures adopted exclusively, ere long diminish, and no further progress be made until a fresh impulse be given, by the employment of some new stimulus.

I shall here anticipate a little, by remarking that a remedy of no inconsiderable value, in stirring up action in callous sores, is scareely less advantageous where indolence is the distinctive feature. I refer to vesication of their margins, which will receive the consideration to which it is entitled under the section relating to the management of callous ulcers. This practice is readily

associated with the treatment by wet strapping, but is not so easily reconcileable with the use of plaster.

But when these and all other means have failed to work a change for the better, we have still a potent auxiliary in reserve in counter-irritation, effected by a small permanent blister on the upper part of the leg, which is almost always attended with marked benefit. The cuticle having been raised by the application of Acetum Cantharidis to some point below the knee, not lying over a vein, and as little exposed as possible to disturbance from muscular movements, the surface denuded must be dressed daily with a disc of Brown's or Albespeyre's Cantharidine paper about the size of a shilling. In some individuals whose skin is more than usually sensitive, the epispastic paper causes a good deal of pain for the first day or two, and cannot be borne for more than twelve hours out of the twenty-four; and, when this is the case, it becomes necessary to dress with the paper in the morning only, and with any simple cerate at night.

This very moderate degree of counter-irritation furnishes a considerable discharge from a small surface, and appears to act quite as beneficially upon a stubborn sore as an issue made with caustic potass, and maintained, in the customary

manner, by the introduction of peas or beads,* which would be very likely to give rise, in the lower extremity, to an ulcer as intractable, perhaps, as the original disease. In a paper by Mr. Skey,† on the "Treatment of Varicose Enlargements of the Veins by Caustic," he mentions that the sores thus produced are sometimes very tedious, requiring three or four months for their cure. And Mr. Whately gives a case of ulcer on the leg, originating in an issue made below the knee, the cure of which occupied two months.

Among other cases, I succeeded, in 1850, in effecting, by this proceeding, the cure of a large superficial ulceration on the inside of the calf, which had resisted for nine months all other measures, constitutional and local. Nothing beyond a general delicacy of habit could be detected; but the persistence of the local affection led me to suspect that some latent disorder of the general health existed, which might render the healing of the sore unsafe, even could it be accomplished by

* A work, by Dr. Bresciani de Borsa, physician to the hospital at Verona, is noticed in the "Medical and Chirurgical Review" for April, 1846, in which he speaks in very high terms of the utility of issues in the vicinity of old ulcers which have resisted every other mode of treatment. More than a hundred cases, he states, had been cured in this manner, and many instances of cure had occurred, in the hospital, of ulcers of twenty or thirty years' standing.

† Medical Gazette, August, 1846.

the ordinary means. The readiness with which it yielded to counter-irritation strengthened this suspicion; and as soon as cicatrization was complete, I suffered the blister on the leg to heal, and formed a similar issue upon the arm, which I directed my patient to keep open as long as he could. This gentleman afterwards removed into the country, and has continued perfectly well ever since he left London.

Another case, attesting still more strongly the utility of counter-irritation in chronic ulcers of the leg, which some surgeons are disposed to question, will be found in the section relating to the management of irritable sores.

When speaking, in a former edition, of the various means resorted to for the purpose of exciting granulation in atonic ulcers, I alluded briefly to the ingenious mode of dealing with these cases suggested by Dr. Golding Bird, of which Mr. Bransby Cooper gave the following details in a surgical lecture, published in the *Medical Gazette*, for October 1, 1847:—"When these ulcers prove very stubborn, and resist all the constitutional and topical remedies usually employed, I have lately witnessed the best results from stimulating their surface by subjecting it to a stream of negative electricity, by a method I shall describe, and which was recommended by my colleague, Dr. Golding Bird.

"At a convenient distance from the indolent ulcer (not less than five or six inches), a portion of cuticle is raised from the cutis by the application of a piece of Emplast. Lyttæ, of the size of a half-crown. The cuticle is detached by a pair of scissors, and on the exposed cutis a piece of zinc foil is placed, of the same size as the denuded spot. A plate of silver foil is laid on the original ulcer, and the two plates connected by means of a thin copper wire. The size of the silver plate is immaterial. Both zinc and silver are now covered with pieces of moistened lint and oilskin, and the apparatus, as recommended by Dr. Bird, is complete.

"In a few hours the surface beneath the zinc becomes white, and a slough begins to form, which in a short time is thrown off, leaving a healthy ulcer behind. In the meanwhile a great change has taken place in the original ulcer; it has thrown aside its indolence; granulations are sprouting and contracting; new skin is forming at the margin, and the whole surface looks healthy and animated."

As the application of the zinc plate to the blistered surface, in all the trials I had then (1853) made of the practice, had been succeeded by a high degree of inflammation round the eschar, I was inclined to attribute the sudden impulse towards cicatrization rather to the counter-irritation

attending the operation of this Electric Moxa than to any direct influence exerted by it on the sore itself. Having now, however, for some years, applied the zinc plate in the manner practised by Mr. Spencer Wells,*—that is to say, not to a blistered surface, but to the skin itself, moistened with vinegar, I found that the improvement in the aspect of the ulcer was not less prompt and striking, although the slough beneath the zinc plate was accomplished with little or no pain and inflammation. The beneficial change, therefore, can only be due to the stimulus afforded to the part by the transmission of a galvanic current through it; and in this simple apparatus we really possess an agency capable of *originating* healthy action in many sores which were previously inert and unmanageable.

The exclusion of *inflammatory* ulcers from consideration as a separate class, on the ground that inflammation is an accidental complication to which all kinds of ulcers are exposed, and is not a characteristic of any one species, might almost justify my passing them by altogether, since their treatment falls quite as much under the operation of general principles as that of constitutional im-

* See an interesting paper on the subject, by that gentleman, in the *Medical Times and Gazette*, for July 23, 1858.

pediments to healthy action. But an inflamed ulcer will often stubbornly resist all the ordinary measures brought against it, and there is one very serviceable antiphlogistic remedy, not usually had recourse to, on which I wish to say a few words.

A well-founded objection to the employment of leeches in such cases is commonly entertained—namely, that the leech-bites themselves are very apt to become troublesome ulcers; and, thus, much more harm than good is to be apprehended from their use. This is undoubtedly true when they are applied upon the inflamed skin of the leg, or over an inflamed vein;* but the difficulty is entirely obviated by applying them, not to the skin, but to the actual surface of the ulcer,—a practic attended with very little pain, and from which I constantly derive the greatest advantage. Two or three leeches will generally be sufficient for this

* "The bite of a leech over an inflamed vein," says Sir B. Brodie, "will give the patient a good deal of pain, and the little wound will be difficult to heal." . . . "Never apply them over the inflamed part, but always at some distance above it."—Lectures, pp. 173, 177.

A middle-aged woman consulted me for an inflamed ulcer on the leg, in January, 1851. A couple of leeches to the surface of the sore removed all pain and inflammation, after which I saw no more of her until the June following, when she came to me in great alarm, with the leg highly inflamed, and six more deep ulcers, in addition to the old sore, all produced by the bites of leeches applied to the *skin*.

purpose, as the blood flows rather freely from an ulcer; but if, after a couple of days, there is still some remnant of inflammatory action, it is easy to repeat them.

Sloughing ulcers may be the result of acute inflammation supervening upon any variety of the disease, of general or local debility, or of morbific matter applied to the surface of any wound or sore, as in hospital gangrene and sloughing phagedæna. Into the consideration of the two last conditions of an ulcer I do not propose to enter.

Should an ulcer have become sloughy as a consequence of inflammatory action, the leg will not, of course, bear bandaging until the acuteness of the attack has been subdued. But, as soon as this is effected, the mere complication arising from the presence of the slough furnishes no valid objection to the employment of the bandage. On the contrary, under a dressing of powdered charcoal, or Barbadoes tar, and the gentle support of the strapping, combined with warm affusion, the slough will be thrown off more readily, and healthy action restored more quickly than under any kind of poultice.

When sloughing takes place in sores on the leg simply from local debility, stimulants will frequently put a stop to it, by exciting healthier

action in the surface. Thus, the balsam of Peru and bituminous substances, especially the Barbadoes tar, have acquired a reputation in the treatment of these cases. Mr. Abernethy and Sir A. Cooper recommended a dressing of very dilute nitric acid (mxx. or mxxv. to a pint of water); and it may sometimes be necessary to destroy the morbid surface, as practised in hospital gangrene, by the strong mineral acids, by nitrate of mercury, or by Sir W. Burnett's solution of chloride of zinc.

Whenever this sloughing from debility occurs in aged persons, or in individuals whose strength is exhausted by disease, or impaired by other debilitating causes, besides endeavouring to support the waning powers, and infuse vigour into the system generally, such means as act especially upon the feeble capillary circulation, foster the development of animal heat, and economise its expenditure, will be found in the highest degree serviceable.

One of the most effectual means of thus exciting both nerves and capillaries to a more vigorous performance of the functions carried on by their conjoint influence, is the administration of opium, in the manner recommended by Mr. Skey (see p. 35).

Among the local measures calculated to keep

up the animal heat in such subjects, one of the best is enveloping the part in layers of carded wool over any other dressings which may be employed. This is a favourite application of Sir B. Brodie, and will afford most essential aid in enabling a weak part to throw off a slough, establish healthy granulation, and ultimately perfect the healing of solutions of continuity so formidable as to threaten a speedily fatal termination. As a remarkable instance of the beneficial effects both of opium and of the envelope of carded wool, I have given the particulars of Case I.

I have included the treatment of indolent ulcers and of *those complicated by varicose enlargement of the veins* under one head, as the intractability of both springs from the same source; and because the same modification of Baynton's bandage; which succeeds with the former, answers equally well in the majority of cases of the latter. But where the dilated veins rest upon the soft parts at the back and inside of the calf, and especially when the Varix is of long standing, and they lie entrenched in a deposition of coagulable lymph, the straps and bandage are lifted over them; insomuch that, eluding the compression which is equably distributed over the entire surface of the limb, they are very imperfectly closed, and a con-

siderable column of blood still weighs upon the capillaries of the ulcer.

It was with the view of remedying this defect in the action of the bandage, that Mr. Startin proposed his elastic riband of vulcanized india rubber, a full description of which, illustrated by a wood engraving, appeared in the "Medical Times" for March 15th, 1851. Wound spirally round the limb from the foot to the knee, or groin, this band, in very many instances, divides and supports the column of blood in the whole course of the enlarged veins very efficiently. I never venture to apply it, however, without a bandage; and in some cases even beneath the bandage, it occasions swelling of the lower part of the leg, with more or less pain, compelling the patient to throw it aside. At other times the contact of the vulcanised india rubber is apt to produce irritation and erythematous inflammation of the skin; but a sheath of cotton web will completely obviate this inconvenience. I have often found it answer extremely well, put on over the bandage; but great care must then be taken that it does not cross the sore, which would be seriously galled by its pressure. Worn thus, it proves a certain and convenient method of securing the turns of the bandage from displacement, when the leg is un-

usually bulky, or where, from any other cause, they are liable to slip.

It is scarcely safe to trust the application of this spiral elastic riband to the patient, as there is no small risk of his drawing it more tightly over one part than another, so as to cause it to act unequally and produce mischievous constriction. I have, in fact, of late employed the following expedient in preference to it, as it is less open to the above-mentioned objections, and serves to direct the pressure quite as effectually upon those points where it is most called for.

Having noticed that when the enlarged vein above an ulcer was closed by the pressure of my finger, the change from the horizontal to the vertical position produced a very slight alteration in the aspect of the latter, I adjust along the course of the vein, or upon any cluster or salient dilatation, a compress of lint or spongio-piline soaked in cold water, and confine it by the wet straps carried upwards from the sore. It is worth noting as evidence of the beneficial operation, and as an illustration of the principle of action, both of the elastic ribband and of the compresses of spongio-piline, that when the ulcer is elongated in the track of a varicose vein, cicatrization usually commences at the upper end, speedily altering its

shape from oval to circular. These measures must of course be regarded merely as superadditions to the treatment of any kind of sore, rendered necessary by the presence of Varix. A few examples, cured at the Hospital for Diseases of the Skin, will sufficiently attest the utility of such compresses.

Indolent and Callous Ulcers Complicated by Varix.

Case V.—James Woolcot, æt. 74; a tall, sallow-complexioned man, with a painful sore in front of the left leg, nearly three inches in length; margin somewhat indurated, and no appearance of granulations. He stated that it originated in a blow received three years ago, and although he had been from time to time under surgical treatment, it appeared to get worse rather than better. He felt pretty well in health, but looked sickly; the veins on the inside of the leg had been varicose for some years.

May 6th, 1852.—Blistered the margin of the ulcer with Acetum Cantharidis; dressed with lint dipped in Dilute Nitric acid lotion, and applied wet straps and a roller to the knee. A mild saline aperient when required.

May 20th.—The thickened edges reduced, but not much improvement in the sore. Adjusted compresses of spongio-piline upon the most promi-

nent veins, beneath the bandage, and ordered gr. ij. of Quinine, with gtt. v. of Tinct. Opii twice a day.

June 3rd.—The ulcer granulating healthily. To continue the quinine and opium, and take porter twice daily.

July 8th.—The sore has been dressed, during the last fortnight, every third or fourth day, and is now soundly cicatrized. Directed the compresses and bandage to be worn still for some time.

Case VI.—Emma Monk, æt. 42; has had varicose veins since she was 21. Two years ago she struck the inner ankle of the right leg, and an ulcer formed; the margin of which is now (April 29, 1852) thickened and indurated, and so painful that she can scarcely bear the skin to be touched, especially in the course of the dilated veins both above and below the sore, which are evidently inflamed. She has attended several hospitals for many months, with little or no advantage.

April 29.—Ordered three leeches to the ulcers, warm water dressing, wet straps and a roller, with frequent warm affusion. Saline aperients and Vin. Colchici.

May 6.—The leeches have been repeated with the effect of entirely relieving the pain. The veins are also diminished in size, and the sore is

granulating. Directed one leech still to be applied twice a week; painted the margin of the ulcer with Acetum Cantharidis, and dressed with Lot. Acid. Nitric., the straps and bandage.

May 27.—The margin was again blistered on the 20th, and the sore is now completely cicatrized. Her subsequent attendance, for the treatment of the varicose veins, enabled me to verify the permanence of the cure at the end of several months from this date.

Case VII.—Ann Drury, æt. 46, Aug. 19, 1852; has suffered from varicose veins since her first pregnancy, more than twenty years ago. Eighteen years back, an ulcer formed on the inner ankle of the left leg, which has healed three times during that period, but never for more than two or three months. In the manner of its outbreak, by vesicles which ulcerate, it corresponds exactly with Sir B. Brodie's description of a sore *caused* by Varix. A second ulcer appeared, on the outer ankle of the same leg, a year and a half since. Both are very sensitive, with callous edges, and no trace of granulations. She has been under treatment at various institutions for years.

Aug. 19.—Directed leeches, and the same measures as in the foregoing case.

August 26.—Granulations have sprung up in

both sores. Blistered their edges, and applied spongio-piline compresses upon the varicose dilatations. She informed me that, ten years ago, the leg had been strapped with plaster at St. Bartholomew's Hospital, but the pain was so severe that she was obliged to take it off immediately she returned home. From the wet straps and bandage she derives the most comfortable support.

Oct. 21.—The ulcer on the outer ankle skinned over. The other proved more stubborn, not being perfectly healed until the middle of November. Both cicatrices continued quite sound on the 3rd of February.

Case VIII.—Daniel Donovan, æt. 34, Nov. 11, 1852. Two ulcers on the inside of the left leg, one about the size of a shilling, the other deep, and oblong, with thickened, perpendicular edges, commencing two inches above the ankle, and extending upwards apparently in the line of a varicose vein. The latter sore first made its appearance eighteen years ago, but healed after two years, and broke out again six years ago. He became an out-patient at Guy's Hospital, where it was strapped, and subsequently poulticed; neither remedy producing the least improvement.

He was not conscious of any affection of the veins until three years since; when he noticed the

saphena interna larger than natural. In November, 1851, he attended as an out-patient at another London hospital, and the veins were then so much dilated that he was taken into the hospital, in order that an operation might be performed upon them, as that was thought to afford him the only prospect of healing the ulcers permanently.

Early in December, an attempt was made to obliterate the trunk and two branches of the internal saphena, by the insertion of five needles beneath them, and winding thread round them after the fashion of the twisted suture. He stated that the veins were reduced in size, but, at the end of two months' confinement to bed, the ulcer was very little benefited.

Nov., 1852.—Eleven months after the operation I found the trunk of the internal saphena converted into a thick impervious cord; but, alongside it, ascended a dilated vein, which, the man asserted, was quite as large as the former vessel before its obliteration. This duplicate of the saphenous trunk appeared to communicate with the branches of the obliterated vein, which expanded into a broad varicose tumour lying immediately above the oblong ulcer.

Nov. 11.—Blistered the circumference of the larger sore; washed the surface of both with solution of Nitrate of silver, and dressed with Lot.

Rubræ Fort., the wet straps and a bandage, closing the veins with compresses of spongio-piline.

Feb. 10th, 1853.—The more recent sore was healed in ten days. The chronic ulcer required several applications of Acet. Cantharidis; and, on the 20th of January was strapped with plaster. It is now completely, and to all appearance, soundly cicatrized.

There is one inconvenience, chargeable against poultices, from which water dressing is not wholly exempt. The unprotected skin of some individuals will not bear the contact of wet bandages for any length of time. The constant moisture provokes inflammation and the formation of pustules, which run together, and give rise to troublesome excoriation and superficial ulceration. This difficulty, with which the practical surgeon is perfectly familiar, may generally be obviated by anointing it with zinc ointment previously to the application of the wet strapping, and employing affusion more sparingly.

Water dressing, again, is not suited to recent open wounds. If applied to a graze of the skin, it soon becomes glued, by the exuding lymph, to the abraded surface, and will obstinately adhere to it, often exciting ulceration and suppuration. A dressing of simple cerate beneath the straps will

be found far more successful in healing a recent breach of surface.

In cases where, owing to the loss of integument consequent on extensive sloughs of the leg, or from other causes, the newly-formed skin round an ulcer is in such a state of tension as to be incapable of yielding further, cicatrization is hopeless until the margins of the sore are freed from the traction to which they are subjected, and this mechanical obstacle to the completion of the cure is done away. The very ingenious operation suggested by Mr. Gaye is admirably adapted to accomplish this object; and I have proposed it to several patients in the condition above described, but have not been able to overcome their repugnance to the knife. I regret, therefore, that I have no personal testimony to advance in its favour.

In ulcers behind the ankle, closely adherent to the malleoli, I have occasionally derived much advantage from a couple of sweeping subcutaneous incisions, carried horizontally beneath the two opposite margins of the ulcer, so as to cut through the adhesions which constituted the main impediment to cicatrization; after which its edges may often be brought almost into apposition by a strap of diachylon plaster, and the cure proportionately expedited. Notwithstanding their utility, however, I suspect that such operations will be chiefly confined to hospital practice.

II. TREATMENT OF IRRITABLE ULCERS.

Certain local conditions of ulcers on the leg,—that is to say, congestion of the blood-vessels, confirmed irritability of nerve, and inflammation of the veins,—have already been referred to as the probable sources of their morbid sensibility; but there is no characteristic of the complaint occasionally so obscure in its origin, so capricious in its nature, or so difficult to manage. It is, in fact, to meet the infinite shades and gradations of this peculiarity that the great multiplicity of topical applications has chiefly been devised; but the practice of those who trust to them alone for success must be more or less empirical. "The greatest experience," says Mr. Abernethy, "does not enable a surgeon to select with certainty a successful application; for every candid surgeon must allow that, after having tried a round of applications without benefit, one has at last been employed from which no great good was anticipated, but which has, nevertheless, completely allayed the morbid feelings of the sore." *

Instead of thus experimenting on a sensitive

* Lectures, p. 110.

sore, trying remedy after remedy until we may chance to hit upon the one which will tranquillize the morbid state of its nerves, and prepare the way for healthier action, a careful investigation of the previous history and present condition of the ulcer will rarely fail to elicit some indications, both of the nature and source of its irritability, and of the means best adapted to remove it. Thus, when we find it to be merely symptomatic of over-distension of the blood-vessels, coming on when the patient stands erect and the limb is exercised, and passing away when it is laid up at night, we know that it will be at once remedied, not alone by rest in the horizontal posture, but by the support of a bandage judiciously applied. If it has become chronic, the pain continuing almost incessantly night and day (in this stage, indeed, it is often much more severely felt at night than during the day), and increased by the pressure of the bandage, we may fairly conclude that the nerves themselves have undergone some morbid change, requiring further and special treatment. This state of the ulcer, and of the adjacent tissues, is usually accompanied by a considerable disengagement of heat,—the heightened sensibility of the part inducing the patient to believe that the increase of temperature is greater than is really the fact. In other instances, I have

found the surface of most sensitive ulcers, and the skin surrounding them, absolutely cold.

In youthful and robust individuals, whose powers have not been impaired by disease, cold water, in conjunction with gentle support, (according to Baynton's method, or by the simpler means I have indicated,) will, in nine cases out of ten, relieve a moderate degree of irritability. But when present in excess, and especially when the temperature and vitality are below the natural standard, the sore will not tolerate cold, nor can the lowest grade of compression be borne until this morbid affection of nerve has been subdued.

Emollient and soothing measures, with rest, will generally accomplish this; but in some inveterately fretful specimens of the disease, they produce the very opposite effect, actually exciting a much higher extreme of irritability;* and such means, under any circumstances, exclusively resorted to, are very apt to weaken still more the tone of the capillaries, and render them incapable of carrying on those operations which are essential to healthy granulation. The great desideratum appeared to me to be, a combination of these apparently incompatible measures, if they could be brought to act in unison; a method by which the morbidly irri-

* "I have seen some (irritable ulcers), says Dr. Colles, where a mild poultice almost set the patient mad with pain."—Lectures, p. 95.

table nerves might be soothed, and gradually inured to the compression requisite for the support of the vessels and of the part generally.

Instead of abandoning support and recurring to the use of poultices, until the excess of morbid sensibility was reduced, I determined to try the effect of emollient fomentations in co-operation with the bandage.

In very many of these cases, a variety of treatment having already been employed, it is necessary to commence by carefully cleansing the skin for some distance round the ulcer with mild soap and warm water, defending the sensitive sore with a pledget of lint dipped in sweet oil. This preliminary is required, in the best tended cases, to get rid of any greasy matter remaining on the surface, which will contribute to heat the part and increase irritability. Adherent crusts or scales must be cautiously detached with a blunt spatula.

The leg is then to be bathed with tepid water, decoction of poppies, or a fomentation composed of equal parts of poppy decoction and spirit of wine; and the ulcer dressed with a piece of soft lint dipped in the same. A watery solution of Opium may be used when the pain is very severe. Moistened straps of soft linen must next be folded round the leg as smoothly as possible, in the same manner as in the treatment by cold water dressing,

and drawn tightly enough to prevent plaits forming under the bandage. Over them the roller, soaked in warm water, is to be carried lightly, and the whole freely bathed for some time with tepid water, or poppy decoction.

The tepid bathing must be persevered with until the pain, which is sometimes intense on the first application of the bandage, is relieved, and repeated as often as any exacerbation occurs, the leg being enclosed, during the intervals of the tepid bathing, in a sheet of oiled silk. During the first twenty-four hours, it is expedient to confine the limb to the horizontal position; before that time has elapsed, however, the morbid sensibility will have in a great measure disappeared, and the patient will begin to experience the beneficial operation of the gentle support upon the part. Permission may now be given to use the limb cautiously, still continuing the tepid affusion. After a time, to be determined by the state of the sore, and the feelings of the patient, cold affusion may be tried, and, if not found to disagree, may be advantageously substituted for the tepid fomentation; not unfrequently, however, this change provokes a return of irritability, and tepid dressing must be pursued until the cure is completed.

The necessity for the oiled silk envelope it still greater with tepid affusion than when cold water

is employed; evaporation will otherwise take place so rapidly, that a greater reduction of temperature will be ultimately effected than by the direct application of cold; none of that tendency to reaction, which counteracts the depressing influence of cold, being excited by tepid water.

Irritable ulcers treated by the bandage and warm affusion.

Case IX.—Mary Watson, aged 56, a laundress, became a patient at the St. George's and St. James's Dispensary, for the cure of a foul, painful ulcer, of ten months' standing, situated between the outer ankle and the heel, Dec. 10th, 1840. Notwithstanding a succession of experiments with all the ordinary varieties of treatment, for more than a year, the ulcer was not a whit advanced towards healing, and the pain was frequently so severe, that she was confined to her bed altogether. In this state it continued, with short intervals of improvement, until Jan. 1842, when an attack of inflammation followed several days' fatigue, and she requested me to visit her.

Jan. 17.—I found the surface of the ulcer covered with a slough, which extended beyond its original margin. Absolute rest in bed, fomentations with strong decoction of poppies, poultices,

and salines with opium, subdued the inflammation, and in about a fortnight the slough separated, leaving a larger and deeper surface than before for cicatrization. As she had no means of subsistence, but by the labour of herself and daughter, and refused absolutely to enter a hospital, I resolved to make another trial of support. The alleviation of pain which the poppy fomentation invariably afforded her, suggested to me the combination of warm water dressing with fomentation and the bandage already described, which I proceeded to carry into effect February 5th.

Feb. 6th.—She had passed a good night, and expressed herself as more free from pain than she had been for months previously. The leg was dressed daily in the same manner, the pressure being very gradually increased.

Feb. 17th.—The sore had improved so much that its cavity was filled up at several points with granulations, almost to the level of the skin. As the discharge was rather profuse, I now substituted cold water for the warm decoction, and, with the exception of an occasional application of nitrate of silver, under this simple treatment cicatrization was completed within five weeks from its commencement.

March 27th.—Discharged quite well, with an injunction not to discontinue the bandage.

Case X.—Elizabeth Cruwys, a charwoman and laundress, about 50, was an occasional patient at the Dispensary, from November, 1841, to April, 1842, with a large deep ulcer, extending across the back of the leg, just below the calf, which had broken out three years before, and had run the gauntlet of all the usual modes of treatment.

At the end of April, 1842, the ulcer had become larger, deeper, and more painful than ever, and three smaller sores had broken out on the upper and front part of the leg, which was very much inflamed and swollen. Her sufferings were at this time so severe, that she promised to submit to any treatment short of actual confinement to the bed, which, nevertheless, I was obliged to insist upon for a few days.

On the 1st of May I visited her at home, and dressed the leg in the same manner as in Watson's case, directing her to unfold the oiled silk, and soak the bandage with warm poppy decoction ten or twelve times during the day and night, and come to the Dispensary in two days to have it dressed. She did not make her appearance till the 5th, four days after the bandage had been applied; excusing her non-attendance on the ground that the leg had been almost entirely free from pain until the night previous, during which she had been compelled to bathe it very frequently to obtain ease. The

depth of the ulcer at the back of the calf was so great, that, at the first dressing, I had found it necessary to place a large card over the cavity, to prevent the bandage from sinking into it. Under this card a large quantity of matter had accumulated; and, instead of employing it again, I now filled up the hollow with small shreds of fine sponge, dipped in the decoction, and dropped lightly into it, applying the straps of wet calico, the bandage, and the oiled silk, as before.

May 7th.—I was much surprised to find the large, deep ulcer filled with healthy granulations, nearly to the level of the skin; two of the three smaller sores were likewise healing rapidly. The discharge being copious, I dressed the leg with lint dipped in cold water, omitting the sponge, but enjoined her to bathe the bandage occasionally with cold water, and still continue to wear the oiled silk. Under this treatment, repeated every third or fourth day, the ulcers were perfectly cicatrized by June 12th. During the whole of this period, about six weeks, the patient had followed her occupation, and had been constantly on her feet till a late hour. Notwithstanding this, she had suffered very little pain since the first application of the bandage, and was considerably improved in health when discharged.

Case XI.—Mr. H——, Pall-mall East, on the 5th of July, 1842, requested me to look at a painful ulcer on the leg. His health had been for several years in a very disordered state, but had improved materially within the last few months.

About two months back, extensive superficial inflammation was excited by a slight scratch on the knee, which was subdued with some difficulty, leaving an ulcer on the shin about the size of a shilling. The surface of the sore was dark and foul, and, together with the surrounding skin, nearly cold, but so exquisitely tender that the slightest touch gave acute pain. A number of livid spots, resembling petechiæ, dotted the calf, and the whole limb was much swollen. He was, at the time, applying a warm bread poultice, and resting the leg on a chair as much as possible, although business compelled him to use it frequently.

In his still feeble state of health, being almost entirely deprived of sleep and appetite, I was very apprehensive that sloughing to some considerable extent might ensue, and ordered him a tonic, and enjoined perfect rest; at the same time, as local support appeared to be strongly indicated, I proposed a trial of the plan of treatment employed in Watson's and other similar cases. He had, however, suffered so severely from the pressure of

a bandage applied a few days before, that he shrank from the suggestion, and at length yielded a very reluctant consent. The pain was at first most acute, but warm fomentation over the bandage soon allayed it, and enabled him to bear its pressure; and I left him with injunctions to repeat the fomentation frequently.

July 6th.—Under the gentle support commenced yesterday, he had been more free from pain than since the accident, and I ventured to increase the pressure a little, recommending perseverance in the warm affusion.

July 12th.—One of the dark spots on the calf suppurated soon after I last saw him, and became so painful that he could not come to town till the 10th. The limb had been laid up in the meantime, a poultice applied to the pustule, and warm water dressing continued to the sore. The pustule was converted into a small ulcer on the 9th, and the bandage was resumed on the 10th. From this date Mr. H—— suffered scarcely any pain, although constantly on foot, and both ulcers advanced steadily towards cicatrization, which was complete by August 6th.

As an auxiliary to this combination of emollient measures and support, perhaps no remedy is so uniformly serviceable in irritable ulcers as the Nitrate of silver. A single application, in the

solid form, to a sensitive surface is often sufficient to induce tolerance of the bandage; and this point once gained, morbid sensibility will very commonly soon disappear altogether. There are cases, nevertheless, in which the pain will be greatly aggravated by the solid nitrate, where a weak solution will yet be successful in allaying it.

Cinnabar fumigation is another application by which the irritability of these sores may frequently be diminished. For this purpose, it was highly commended by Mr. Abernethy.

But when this plan has been tried in vain, and absolute intolerance of the bandage is manifested, I generally infer that inflammation of some of the neighbouring tissues exists, and have recourse to leeches; applying two, three, or more, to the surface of the ulcer, and repeating them from time to time, if necessary, until the excessive irritability is reduced. Whether inflammation were actually present or not, I have never seen any disadvantage attend the practice. On the contrary, the extreme sensibility ere long subsides under their use, until it reaches the point at which the bandage may be resumed; and this step once gained, granulations will in general soon spring up, and the case thenceforth proceed as favourably as a simply indolent sore. The only circumstances in which I apprehend that local abstraction of blood is likely

to be injurious, are when the ulcer is weak as well as irritable,—a concurrence usually resulting from constitutional debility,—and in herpetic ulceration originating in the same cause.

Should, however, the morbid sensibility still persist, counter-irritation, at some little distance from the ulcer, by means of the small open blister described at p. 88, will often succeed in getting rid of it when everything else has failed.

CASE XII.—*Obstinately irritable ulcer, treated by counter-irritation.*

Mr. L., aged about 40, consulted me April 24th, 1851, on account of two small but exquisitely irritable ulcers, situated one behind the outer ankle of the left leg, the other behind the inner ankle of the right, with which he had been tormented for upwards of three years. During the last six months they had frequently been so painful that, for weeks, he was unable to attend to his business by day, and his nights were sleepless. Under escharotics and plaster strapping the sores had healed more than once, but had broken out afresh within a fortnight, these short periods of cicatrization not having been attended with the slighest remission of his sufferings. With the exception of feeble digestive powers, headaches, and a worn

countenance, which might be no more than the natural consequences of the pain he endured and the restless nights he passed, I could not discover anything very materially amiss with his general health; but suspecting some latent mischief as the cause of such inveterate irritability, I began the treatment with various constitutional measures, in conjunction with support and emollients locally. Little or no improvement ensuing at the end of three weeks, a leech was applied to each sore, which drew a considerable quantity of blood and afforded some relief; and, on the 17th of May, I established a blister, about the size of half-a-crown, just below the knee of one leg (the sore on which was the more painful of the two), and a second upon the arm, continuing to bandage the legs as before. All pain ceased as soon as the blisters discharged freely; and in little more than a week from this time, both ulcers were cicatrized. Three months afterwards (Aug. 28) the cicatrix behind the left ankle was somewhat indurated, but the cure promised to be sound, and the patient felt stronger and better in health than he had done for many months. The blister on the leg was allowed to heal when the sores were perfectly skinned over, that on the arm being kept open permanently.

The practice will be more fully noticed pre-

sently, but from what I have seen of the plan of treating chronic ulcers by applying a large blister *over* them, so highly eulogized by Mr. Syme, I may here state briefly my persuasion that, when a callous sore is at the same time irritable, its morbid sensibility will often be seriously aggravated by it. In those cases, notwithstanding, to which I referred at p. 19, where a point of skin projecting from the margin of the ulcer, and not its surface, is the seat of pain, I have sometimes removed it entirely by touching the spot with Acetum Cantharidis, and raising a minute blister; thus imitating successfully the process by which I had observed that Nature herself relieves it.

With respect to the method recommended by Mr. Critchett in unmanageable cases of sensitive ulcer, — that, namely, of compressing them by plaster strapping applied as tightly as it can be drawn,—I will not hazard any positive opinion. In the few instances in which I have made trial of it, the pain produced has been so insupportable that the patient has been compelled to tear off the straps soon after I had put them on. But in a morbidly sensitive sore complicated by Varix, the pain will frequently be relieved at once by a tight bandage; and I can well believe that there are other instances in which a very high degree of sensibility may be thus subdued. Although Sir

Everard Home's exposure of the evils resulting from, and reprobation of the indiscriminate application of compression to ulcers, were chiefly directed against its employment in sores of this character, several of the older writers, from Wiseman downwards, attribute their success in curing all varieties of the disease to the *tight* bandaging they practised. As John Bell expresses it, they "squeezed them into good humour by compresses and firm bandaging."

Nevertheless, with my experience of the control which may be exercised over this class of ulcer, by leeches, by counter-irritation, and by equable support combined with soothing applications (to say nothing of escharotics* and alteratives), I must confess that I should feel very reluctant to resort to powerful compression in any but exceptional cases: being rather disposed to look upon it as a last resource, to be tried only when all other treatment had proved unavailing.

* It is well known that emollients and sedatives do not always succeed best in alleviating the anguish of a confirmed irritable sore. "Wiseman, speaking of such an ul er," observes Dr. Underwood, "has this bold expression, which I doubt not was the result of experience,—'The best anodyne had been to have filled it with precipitate.'"—Treatise on Ulcers, p. 105.

III. TREATMENT OF CALLOUS ULCERS.

THE marked features of this class of sore are the elevated and thickened margin encompassing them, and the almost total absence of any attempt at reparative action. Whatever objections may attach to tight bandaging under other circumstances, the absorption of the indurated deposit, in which these sores are more or less deeply imbedded, will be very materially promoted by it. It is thus that the pressure of thin sheet lead, beneath the bandage, proved successful in the hands of Mr. Else and others, in effecting the cure of obstinate ulcers, after all the customary means had failed; a proceeding sanctioned by Sir E. Home, and more recently approved of by Sir B. Brodie. In the purely callous ulcer alone, however, where the margin is hard and insensible, can this mode of compression be resorted to, without great risk of its producing fresh ulceration.

I remarked, in a former section, that the action of plaster strapping upon this kind of sore is not limited to the pressure it exercises upon its margin. By stimulating its surface, a thin, scanty secretion will become more abundant, and healthier in quality; and in proportion as healthy secretion is augmented the absorption of the indurated "welt,"

the chief obstacle to granulation, will be further expedited.

But the surface of a callous sore of long standing will often require a more powerful "discutient" or "digestive" than even the Emplastrum Resinæ. We may, in such cases, have recourse to the red Precipitate in the simple form, or in the combination mentioned under the name of Lotio Rubra Fort. p. 76. Cerat. Resinæ and the following ointment, which is much employed at the Hospital for Diseases of the Skin, are likewise excellent topical stimuli:

Unguentum Rubrum.

℞ Hydrargyri Bisulphureti	gr. xv.	
Hydrargyri Nitrico-Oxydi Lævigati	gr. xv.	
Creasoti.	℥ij.	
Adipis Recentis	ʒi.	M

Although unctuous dressings cannot very conveniently be used in conjunction with plaster strapping, they are in no way incompatible with the substitute for it described in the foregoing pages; but instead of covering the sore and the skin to some distance round it, according to common practice, with a huge plaster of these ointments, it is far better to cut a piece of lint, spread with them, to a size and shape rather less than those of the sore, and introduce it within its margin. I have also found compresses of lint on

either side of a callous ulcer, dressed in this manner, quite as effectual as sheet lead in exciting the absorbents to action. To these means I sometimes add the local vapour-bath, by means of Dr. Macartney's apparatus, and brisk friction of the diseased skin, with soft sponge, whenever the dressings are renewed. Whether wet straps or plaster be adopted for that purpose, the only safe mode of applying the necessary compression is that of strapping the limb from the toes upward, proposed by Mr. Scott.

There is, however, another method by which the same object may be more speedily attained. This is the proceeding so warmly recommended by Mr. Syme in his "Contributions to the Pathology and Practice of Surgery." It consists in the application of a large blister over the sore and the neighbouring swelled parts of the limb, for the dispersion of the subcutaneous induration and thickening, so as to relax the integuments, and thus remove the obstacles to healing action. He states that "no subsequent treatment beyond the attention requisite for ensuring quiet and cleanliness is needed, and that recovery is completed not only more quickly, but with much less tendency to relapse than when accomplished by other means." . . . "The facility, rapidity, economy and lasting effect of this treatment," continues Mr. Syme, "seem to give it a decided advantage over

the other methods in use; and, so far as I am aware, no one who has tried this plan ever afterwards hesitated to employ it in preference to any other."

Having repeatedly witnessed the beneficial operation of this practice (with certain limitations to which I shall presently advert), in sluggish ulcers of long standing with callous margins, and likewise in deep sores with elevated, perpendicular edges, I can bear testimony to its efficacy in getting rid of the obstacle which had hitherto, in such cases, prevented the reparative powers of the part from originating healthy action. But though the removal of what may be termed the chief bar to improvement in callous ulcers, the deposit of lymph, namely, beneath and around them, is unquestionably a very important step towards their cure, and Mr. Syme might fairly have assumed that blisters are preferable to all other means heretofore resorted to *for this especial purpose*, in treating the subsequent management of the case as an affair of comparatively little moment, he has taken a course extremely likely, I conceive, to bring the practice into discredit. I know that the inference, very commonly drawn from the passage quoted, to the disappointment of both surgeon and patient, is, that the blister having done its duty, the sore will heal spontaneously and

permanently; a conclusion against which Mr. Syme would, doubtless, be the first to protest. But if, on the other hand, confinement to the horizontal position be indicated, and nothing short of it will ensure the requisite quiet, it certainly ought to have been declared in more positive and precise terms.

With all deference for Mr. Syme's authority, however, I cannot coincide with either view of the matter. In the first place, admitting that an old ulcer, treated by his plan, may possibly heal without absolute rest, recovery would rarely, I think, be completed with facility and rapidity. Secondly, whilst readily conceding that, in very many cases, —healthy granulation being once established,— where perfect rest is enforced, the sore will progress steadily, if not rapidly, towards cicatrization, I very much fear that an exclusive reliance upon Mr. Syme's plan for the *completion* of the cure,— even where the horizontal position can be strictly maintained,—would often be attended by failure. But I have already shown that with the mass of the labouring classes, the greatest sufferers from this malady, it is next to an impossibility that any plan of treatment, requiring perfect rest as the necessary condition to its completion, can be put in force; consequently, unless some more practicable after-treatment be had recourse to, a very

small proportion of those most in need of assistance, would derive any permanent benefit from the measure under consideration. Thirdly, it is not in accordance with the experience of nearly all who have devoted their attention to this subject, that cures perfected chiefly by rest show "much less tendency to relapse than when accomplished by other means." The very reverse of this proposition is one of the principles laid down by John Bell, Underwood, Baynton, Whately, Home, and Scott. Sir E. Home asserts that cures, effected under the use of stimuli and judicious support, are sounder than those brought about by rest, in the proportion of four to one. I need not, however, dwell upon this point, having discussed it elsewhere,—at greater length, perhaps, than such of my readers as still adhere to Baynton's method will deem necessary. Lastly, I must observe, that the discipline proposed by Mr. Syme, "carried fairly into effect," is unnecessarily severe. I have heard resolute men complain bitterly, for more than twenty-four hours, of the pain caused by the application of a blister in the manner recommended, to an indolent or callous sore; and have seen more than one instance in which the morbid sensibility of an irritable ulcer has been very considerably aggravated by it.

Two cases from my note-book will substantiate most of these positions.

Case XIII.—Mr. G. P—, aged 33, was attended by me in September, 1848, for an ulcer on the leg. He reported, that ten years ago he suffered a severe attack of erysipelas on the same leg, terminating in extensive subcutaneous abscesses, which nearly proved fatal. His health had been very good of late, but the limb affected was weaker than the other, the veins were varicose, the skin darkly stained, and swelling came on if he fatigued himself, or caught cold. May 28th, 1848, he grazed his shin, and an ulcer formed, for which he had been under treatment ever since, a great portion of the time confined to his bed. The leg had not been strapped, and only lightly bandaged to confine the dressings. A large blister had been applied, but had caused such extreme suffering, without being followed by the slightest improvement (although he had kept his bed per-force, for some time after it), that, on a repetition of the blister being proposed by the surgeon under whose care he then was, he refused to submit to it, and unctuous dressings, with rest, had since been the only means employed.

Sept. 13.—When I first saw it, the ulcer was extremely sensitive, but not inflamed; its surface smooth, with not a trace of granulations, and very little surrounding induration; the discharge profuse and watery. A coating of ointment and scales

of cuticle extended for some distance round it; and when this was carefully washed away, it left the skin very red and tender. It was then treated by the combination of soothing measures and support I generally commence with in irritable ulcers, a douche of cold water being directed every morning over the bandage.

Sept. 20.—The surface of the sore covered with florid healthy granulations; the skin was clean and sound, and he was able to go out and attend to his business. On the 24th the ulcer was reduced to half its former size, and quite free from pain; but on the 25th I was sent for to him, and found that violent inflammation and vesication had come on above the ankle, presenting the appearance of a severe scald. On inquiring into the cause of this mischief, I learnt that he had been into the country the day before, and, having walked much more than was prudent, the bandage had galled the skin. Warm water dressing was applied, and the limb laid up.

Sept. 30.—The excoriation being nearly healed, the bandage and straps were resumed; and by the 5th of October the leg was perfectly well.

The second case was an example of that conjunction of irritability with callousness to which I formerly alluded as not unfrequent behind the ankle. I was at the time trying the efficacy of

Mr. Syme's remedy (although I had then ceased to apply blisters of the size recommended by him), and as the hard nodosity on which it rested raised the sore considerably above the surrounding skin, I determined to have recourse to it, notwithstanding the existence of a high degree of morbid sensibility. The plaster was not large enough to extend more than half an inch beyond the margin of the ulcer, but the agony my patient endured compelled him to remove it before it had been long applied. Vesication occurred nevertheless; but the sensibility was so much increased, and continued so harassing for many days afterwards, that he was entirely confined to the sofa, and would scarcely see me. Meantime the induration gradually disappeared, and with it much of the irritability; so that, when at length I was able to put on the bandage once more, cicatrization took place speedily.

Recognising, therefore, the great utility of Mr. Syme's suggestion as a means of promoting the absorption of that indurated deposit which is the principal source of intractability in callous ulcers, and which frequently proves an additional impediment to healthy action in those merely characterized by atony, a few experiments satisfied me that, by modifying in some degree the agency whereby this object is attained, the sore and parts subjacent

might be roused from their torpid habit, with scarcely any pain; the process, at the same time, being rendered perfectly consonant with that principle of after-treatment which alone is applicable to the great bulk of the cases met with in the lower classes, and which an ample fund of recorded experience has proclaimed to be the best adapted, in patients of all classes, to complete and maintain the cure.

Instead of applying a blister large enough to cover the ulcer and a considerable portion of the surrounding skin, I found it quite sufficient to paint, with a camel's hair brush dipped into Acetum Cantharidis, from a quarter to three-quarters of an inch of the skin at the margin of the sore; making this streak wider or narrower in proportion as the induration extended to a greater or less distance from it. When the integument itself is in a callous, horny state, several coatings of the liquid may be required; and it should be allowed to dry before the leg is dressed. It rarely happens that much inconvenience is felt during the action of the blistering fluid, the patient being able to bear the pressure of a bandage lightly applied, and to take moderate exercise; sometimes, however, it causes a good deal of pain, and it becomes necessary that the limb should be laid up for twenty-four hours. Within this period vesication is usually accomplished to the requisite extent, and the de-

tachment of the thickened cuticle, together with the flow of serum from the exposed surface, lowers the elevated margin quite as effectually as the larger blister.

But the rise of granulations, which ordinarily follows the dispersion of the indurated substratum of an ulcer, is only the first step in its progress towards healing; and, unless the sore be still carefully tended, it will speedily relapse into its former indolent or callous state. In all cases, therefore, as soon as this step is gained, no time should be lost in applying either Baynton's bandage, or the simple substitute for it which I employ; since upon no other after-treatment can we so confidently rely for bringing about a sound and lasting cicatrization.

When most successful, a repetition of the blister is often called for, either for the purpose of doing away with a remnant of induration, or of counteracting any tendency to indolence which may subsequently be developed.

Callous ulcers treated by vesication and the bandage.

Case XIV.—Mrs. B., aged 55, called on me early in May, 1851, with a large deep ulcer, describing a curve of quite six inches in length, from

a spot just above the inner ankle of the right leg, across the lower part of the calf, almost to the outer ankle. Considerable induration surrounded the ulcer, and its margin at the convexity on the calf was little less than an inch in depth. She spoke of it as dreadfully painful, destroying her rest, depriving her of appetite, and making life a burden to her. It commenced upwards of fourteen years ago, over a cluster of varicose veins, with which malady she had been troubled for more than twenty years. One of the veins had burst three times, and, on the first occasion she states that she nearly bled to death before she could obtain assistance; since which she has constantly worn a bandage. The sore formerly healed several times for a short period, but soon broke out again, and has now resisted all attempts to cure it for nine years.

I began the treatment by applying leeches to the surface of the ulcer, which were repeated in a few days, with the effect of almost entirely removing the pain. After this its circumference was blistered to the width of half an inch. At the same time support and astringent lotions were employed, and Mr. Startin's elastic riband wound round the leg on the outside of the bandage, the calf being so large that the roller could not otherwise be retained in place. By the end of May the size of the ulcer was reduced to the central portion traversing

the calf, the depth and situation of which rendered it somewhat difficult to manage; but Acetum Cantharidis having been applied a second time to its margin, the whole was perfectly healed on the 30th of June.

During the last month of her attendance she walked a mile and a-half to my house three times a week, and took considerable exercise daily without pain or inconvenience.

Case XV.—Mary Ann King, aged 40, a street-seller, attended the Hospital for Diseases of the Skin for the cure of an enormous ulcer on the inside of the calf of the left leg, and a smaller sore on the inner ankle, August 26th, 1852. The smaller sore originated in an abscess, after fever, three years ago. The larger one broke out twelve months since. The margin of both ulcers, and the skin for some distance round the larger of the two, was high, rugged, and horny; the surface of the large sore sloughy; and the whole limb swollen and painful, although she always wore a bandage. Her health appeared to be tolerably good.

August 26th.—Three leeches to the larger sore, one to the smaller. Blistered the margins of both. Dressed with a lotion of Chloride of lime, the wet straps, and roller, having previously washed their surfaces over with a solution of Nitrate of silver.

The leeches were repeated, and the indurated skin round the two ulcers blistered several times; Lot. Rubra was substituted, as a dressing, for the Chloride of lime lotion, and the wet straps and bandage continued.

October 28th.—The smaller sore entirely healed. The other, which, when she first applied, was full six inches in length and five in breadth, is now scarcely larger than half-a-crown, the woman having followed her occupation without intermission during the last six weeks.

November 11th.—She came to show me the latter, reduced to about the size of a shilling, and did not return after this date.

Case XVI.—Mr. F—, a stout gentleman, of scorbutic habit, æt. 52, called March 20th, 1857, with a large and deep ulcer on the outside of the left leg, surrounded by several smaller ones. The whole limb below the knee was much swollen and hard, presenting an appearance not unlike that of Phlegmasia Dolens. The skin round the ulcers was eczematous, tuberculated, and callous, and covered with serous exudation. In 1850, after a severe illness, which left him extremely weak, with œdematous lower extremities, a pustule formed on the left leg. It scabbed, and appeared to be getting well, when he poulticed it, and converted it into

an open sore. Although under surgical care from its outbreak, the sore continued to increase in size, and to become more and more painful. It was never strapped with plaster, but treated by water dressing and the bandage. The only thing that afforded him any relief was Barbadoes Tar.

March 20th, 1857.—As his tongue was foul, and his face studded with a pustular and tubercular eruption, I prescribed alteratives and tonics, washed the gelatinous surface of the ulcers over with a solution of Nitrate of Silver (ʒj to ʒj), blistered the diseased skin, dressed with Lot. Rubr. Fort., and applied wet strapping and a muslin roller.

All pain ceased soon after the first dressing. He recovered his appetite, slept well, and improved steadily in health, the ulcers cicatrizing so rapidly that, on the 9th of April, to prevent the large one closing up entirely, I deposited six peas in what remained of it, and converted it into an issue. I thought this precaution called for in such a case, and was glad to find, on seeing my patient recently, that his health continued quite sound, the skin was clearer than it had been for years, and that the issue was kept open without any trouble.

In the classifications of some authors, sores of a specific nature form a separate variety of ulcers on the leg. Of this we have an example in Sir E.

Home's fifth species:—"Ulcers attended by some specific diseased action." Syphilitic, scrofulous, cancerous, and herpetic sores, are particularized by him; but, as long as they retain their specific character, they are in no way distinguishable from such results of specific action occurring in other parts, and ought, therefore, to be withdrawn altogether from the catalogue, and referred to the diseases from which they spring. It is true that measures, which are capable of successfully combating them elsewhere, will often fail in *completing* the cure when the leg is the seat of the disease; but this arises merely in consequence of the local source of intractability, peculiar to this region, supervening upon that engendered by specific disease; the local impediment to cicatrization remaining active long after the original source of the malady has become extinct; when, in point of fact, the sore is converted into a simple chronic ulcer. From many such instances, met with in dispensary and hospital practice, I select the two following:—

Ulcers, originating in specific disease, after its cure remaining intractable from locality.

Case XVII.—Joshua M. became a patient of the St. George's and St. James's Dispensary, Feb-

ruary 14th, 1843, with a large, deep, very sensitive ulcer on the shin, and a smaller sore of an unhealthy aspect at the back of the leg, over the tendo Achillis. Both ulcers were traceable to a syphilitic tubercular eruption, which had broken out over the arms, body, and legs, eighteen months before; many of the tubercles ulcerated, and the attack continued for upwards of twelve months, yielding at length to a long course of medicine, but leaving, as vestiges, the ulcers on the leg, which had remained for more than six months in the same state as that described above.

Feb. 17.—Tepid water dressing to the ulcers, wet straps and the bandage, with occasional warm affusion. Plummer's pill every night, and saline aperients when required.

Feb. 24.—Both sores healing slowly. Quin. Disulphat. gr. ij. twice a day. Dress as before.

March 17th.—The larger sore entirely healed; the smaller had been well nearly a fortnight.

Case XVIII.—John D., a patient at the Hospital for Diseases of the Skin for six months, Jan. 6, 1851, with four large, unhealthy ulcers on the inside and back of the calf, of nearly three years standing, the remains of a syphilitic eruption over the limbs and body. When he first applied for relief, erysipelatous inflammation existed from the

knee to the ankle. This was speedily removed, and the sores have somewhat improved under the Iodide of mercury. The edges are now, however, ragged, thickened, and elevated, with burrowing sinuses, and no appearance of granulations.

Jan. 6.—Dressed with Glycerine lotion, the wet straps, and bandage. Contin. Hydrarg. Iodid.

Jan. 13th.—All the sores filled up with granulations to the level of the skin. The Glycerine dressing changed for Nitrate of silver lotion (gr. v. ad ℥j), and compresses of lint beneath the bandage.

Jan. 27th.—Three of the ulcers have been soundly healed for some days; the fourth was contracted to a mere point, which in all probability soon skinned over, as he did not make his appearance after this date.

In the same manner scrofulous ulcers will remain unhealed on the lower extremity for an indefinite period, when a suitable constitutional treatment has cured them entirely in other regions. In such cases, after washing the surface with a solution of Nitrate of silver, Lotio Rubra, or Creasote lotion, I have found no dressing answer better than one of cod liver oil on lint, in addition to which I generally put on, over the wet strapping, a flannel roller.

Prognosis.—Under the section relating to the treatment of constitutional sources of intractability, the propriety of healing ulcers on the leg, under certain circumstances, was reviewed, and the conditions in which it might prove dangerous pointed out. There are some few ulcers, again, the permanent cure of which may almost be regarded as an impossibility; and in forming our prognosis neither of these contingencies should be lost sight of. The circumstances which may render it impossible to heal a chronic ulcer may be either constitutional or local; but impediments of the former class can scarcely enter into our estimate of the prospects of effecting a cure, as we can only infer their insurmountable nature after the failure of repeated attempts to conquer them. In London, for instance, an obstinately irritable ulcer, which has resisted for years every variety of surgical treatment, will often lose all irritability, and begin to granulate a few days after the patient has removed into the country. There are, on the other hand, some peculiar local conditions which, when present in an extreme degree, deprive us of all hope of accomplishing a sound and lasting cicatrization.

One of these conditions is an extensive destruction of the fascia, sheathing the muscles and tendons of the leg; which accident exerts an

injurious influence over the healing process in the following manner. As the granulations shoot up from the surface of the exposed muscles or tendons, the base of the cicatrix necessarily becomes firmly adherent to them, and is consequently liable to be dragged upwards or downwards by their slightest movement. Cicatrization, nevertheless, will proceed until a tense ring of new skin has been formed, and at this stage the process is suspended altogether, every muscular effort being attended by severe pain. Perfect repose in the recumbent position, and blistering the circumference, may, perhaps, succeed in overcoming the difficulty, after Baynton's plan or my proceeding have utterly failed; but, whenever the patient begins again to use the limb, the drag upon the newly formed structure is so incessant, that the cicatrix rapidly gives way, and the ulcer breaks out afresh. From the nature of the case no kind of bandage can guard against a relapse; but the inconvenience of such an incurable sore may be very much diminished by wearing constantly the wet strapping beneath a Churton's roller.

Another condition militating equally, as long as it lasts, against our chances of curing an ulcer, is the existence of any disease of the periosteum, or bone, beneath it. CASE IV., nevertheless, is a

striking example of the rapid separation of necrosed bone under the support afforded by the bandage.

Adhesion to the fascia, tendons, or bones, to a slight extent only, may protract the cure, but the obstacle arising therefrom may generally be surmounted by repeated vesication, either of the margin of the sore during its treatment, or of the cicatrix and surrounding integument after it has healed. And should that fail, the section of the uniting medium, as described at p. 105, may be had recourse to.

The average time which may be occupied in the cure is another point on which the surgeon will often be expected to give his patient some definite information. A favourable or unfavourable prognosis will depend on the absence or presence of the lesion of fascia, or bone, just referred to; on the extent of the surface to be re-constructed, and on the length of time the solution of continuity has endured, a long-standing ulcer having become an established habit of the system which it is not at first easy to break through. The state of health, the age, the habits, and occupation of the patient, must also be taken into account; certain employments (involving the necessity of standing for many hours daily) predisposing to ulcers on the leg, and rendering their cure proportionably slower, as well as less sure and permanent.

Although not disposed to ascribe much practical value to such statistical data, it may not be without interest to mention, that the average duration of the cure in the forty-seven cases reported by Mr. Whately was 63 days; but this includes four cases which were, severally, 7, 8, 10, and 12 months under treatment; those of Mr. Baynton, fourteen in number (exclusive of two complete failures), averaged 49 days; while the mean period of detention in hospital of six hundred and ninety-three cases, commented on by M. Parent Duchatelet, was 52½ days. Twenty-five of these patients, however, were more than 100, and ten more than 125 days confined to the bed.

The last-named distinguished physician, and all other authorities who have investigated details of this kind, agree in stating that the left leg is much more frequently affected than the right; whence it might naturally be inferred that ulcers on the former limb would prove the more intractable. It appears, on the contrary, as the result of M. Parent Duchatelet's observation, that ulcers on the left leg, *ceteris paribus*, healed more readily than those on the right.

Measured by the same standard, the cure is completed by means of wet strapping in less than Mr. Whately's average period, although, perhaps, not so speedily as by Baynton's method. An ulcer

of a few months standing and of moderate dimensions, unattended by aggravating circumstances, may generally be healed in two or three weeks. Where unfavourable conditions are present, it may require as many months. But time becomes a matter of less importance, when the patient is placed, almost from the commencement of the treatment, in a position comparatively free from pain and inconvenience; the limb being so comfortably and effectively supported that, with ordinary care, he is enabled to pursue his usual avocations, without interrupting the progress of the cure.

The most perfect cicatrization can never be deemed quite secure, unless the bandage be worn for some time afterwards to maintain the cure; an object which will be much advanced by soaking the straps in a solution of Chloride of lime.

It remains, finally, to sum up and consider the bearing of the various practical points here discussed upon the two questions:—1st. Of the comparative value of rest and support by bandaging in the treatment of ulcers; and 2nd. Of the relative position which topical applications ought to hold with respect to these two principles.

It appears, then, *first*, that although *both* rest and support are especially adapted to counteract

the morbid condition which is the substantial source of the intractability of ulcers on the leg, almost all writers on the subject agree in expressing great doubts of the permanence of the cure accomplished under the influence of the former. But were they equally to be relied on for completing and maintaining the cure, in the vast majority of cases the circumstances of the patient absolutely prohibit the efficient employment of rest. On the score, therefore, both of its superior efficacy and of its expediency, the weight of experience may be very decidedly quoted on the side of support by bandaging.

And, *secondly*, if Whately and Baynton—by demonstrating that careful and judicious bandaging is capable of superseding topical remedies altogether in a very extensive range of cases—exposed, on the one hand, the fallacy of that exaggerated opinion of their virtues which was formerly entertained, it is clear, on the other, that they fell into the opposite error, and formed much too low an estimate of their real claims to consideration. And this mistake not only rendered their own practice less successful than it might otherwise have been, but has contributed to turn the scale once more in favour of rest employed in combination with them. Many topical applications are indubitably very serviceable auxiliaries

to both rest and support; the more important are essentially necessary as preparatory measures for the latter. But the fullest recognition of their true claims in no way brings them into competition with either principle, in relation to which they are no more than subsidiary forces, and ought never to have been raised to the rank of equivalents.

To come back, therefore, to the point from which we started, "instead of limiting our resources by taking up and advocating any one remedy or line of practice exclusively," I contend that, whilst we show a readiness to avail ourselves of *all* special measures, constitutional as well as local, which are calculated to meet the numberless exigencies of the complaint, the bandage, properly constituted, must ever be looked upon as the necessary super-addition to, or complement of, all other means of cure whatsoever.

UTILITY OF THE BANDAGE

IN THE

TREATMENT OF CUTANEOUS ERUPTIONS ON THE LEG.

In several of the cases related in the preceding Essay, considerable inflammation of an Erythematous character, with pustular and tubercular eruptions, existed in connexion with the ulcers, and yielded readily to the treatment which cured them.

The particular cutaneous affection, however, for which I am chiefly anxious to bespeak attention, is Eczema Rubrum, a very frequent source of complication of ulcers on the lower extremity; and the same remarks will apply equally to many other eruptions which attack the legs in common with the rest of the body. If this malady were not too well known to require description, the valuable "Treatises on Diseases of the Skin" of Mr. Erasmus Wilson and Dr. Moore Neligan would exempt me from the necessity of entering into any details with regard to its nature and characteristic features. There is, nevertheless, one practical point, in connexion

with its management *in this locality*, upon which these gentlemen do not touch.*

To a certain extent Eczema on the leg is amenable to precisely the same treatment as when it affects the skin of the upper extremity, the face, and trunk; but like ulcers, and for a similar reason, it is often peculiarly refractory upon the lower extremity. The constitutional disturbance in which it usually originates may be thoroughly rectified by appropriate measures; but the local mischief will still set at defiance all the ordinary local remedies, as well as the most judicious constitutional treatment.

Although this harassing disease, with few exceptions to the contrary, indicates an irritable and unhealthy condition of the system, its exciting cause, when confined to the leg, is sometimes purely local. As I have already had occasion to remark, in estimating the merits and demerits of Baynton's plan of treating ulcers, it is very commonly due to the application, in such cases, of plaster strapping, or of unctuous dressings of a stimulating nature. Local irritants are specified, by both the authors cited above, among the causes

* In his very instructive Lectures on Diseases of the Skin, published in the "Medical Times" for 1846, Mr. Startin recommends the compression of a bandage in what he has termed Eczema inveteratum crustatum, "a variety of the disease," he remarks, "very common on the lower extremities."

of Eczema; and Dr. Moore Neligan speaks of its "very frequent occurrence on the legs of old persons in whom the small superficial veins are in a varicose condition."*

Varix must unquestionably be set down, not merely as a powerful predisposing cause of Eczema, but as a source of intractability which can only be effectually combated by measures especially calculated to neutralize its influence. It is, however, by no means an essential condition to the outbreak of this disease on the lower extremity; which is met with almost as frequently, and proves scarcely less obstinate, when the veins are perfectly healthy. In fact, as long as the part affected is dependent, the capillaries of the inflamed integument are in a state of congestion but little inferior to those of an ulcer in the same region. This is easily demonstrable, either by the aid of the microscope, or by the simple experiment to which I appealed at p. 10. A patient labouring under Eczema on the leg has but to assume the erect posture, and from every pore of an excoriated surface, comparatively dry while the limb is laid up, a gush of serum will take place, to such an excess as amply to justify the popular name for this variety of the complaint,—"weeping leg."

* Practical Treatise on Diseases of the Skin, p. 79.

The first step, accordingly, in the treatment of Eczema of the lower extremity, which is enjoined upon the patient, is confinement to the bed or sofa; and in the acutely inflammatory stage this is always advisable, often indispensable. Many local remedies, moreover, of established repute, can scarcely otherwise be properly applied. But we have the same difficulty to encounter in carrying such an injunction fully into effect, as in the case of ulcer on the leg. Some few may submit partially to the discipline; for the many, absolute rest is impracticable. Even when it can be fairly put in force, the capillaries of the inflamed integument will derive very considerable additional benefit from support; and no kind of bandage is so well suited to afford it as the wet strapping. At the same time it answers most commodiously both as a protective and as a medicated dressing. For patients whose position in life constrains them to be more or less on foot, there is no alternative. Acute Eczema, under such circumstances, almost invariably runs on into the chronic form, when, as Dr. Neligan truly observes, "it is most rebellious to treatment, years sometimes elapsing before it can be subdued."

That the bandage, already described, may be relied on as the most effective substitute for rest, where that is impossible, or when it is repugnant

to the habits of the patient, in Eczema as well as in ulcer on the leg, I shall now endeavour to show; prefacing the cases, which will serve to illustrate and make good my estimate of its beneficial operation, by a brief outline of the remedies I combine with it, both in the acute and chronic forms of the complaint.

As, in its *acute stage*, Eczema is a highly inflammatory disease, antiphlogistic remedies must necessarily constitute the basis of the treatment. In the average run of cases, early abstraction of blood, by leeches, will suffice to check its violence and shorten its active career. Should an ulcer exist simultaneously with the cutaneous eruption, three or more may be applied at once to its surface; and as a considerable amount of blood will flow from this source, if the leg be immersed in warm water, the practice will seldom fail in arresting inflammatory action. I have heard patients make the remark that they have watched the red excoriated area gradually becoming paler under the loss of blood occasioned by a single leech. If there is no breach of surface, I apply them without hesitation to the skin; feeling little apprehension of the leech-bites ulcerating, as long as the limb is properly supported by the bandage.

The part affected should then be bathed for some time with thin gruel, and washed over with

a solution of Nitrate of Silver, ʒss. to ʒj., allowing the first coating to dry, and repeating its application over any spots where the serous exudation breaks out afresh. The surface must next be anointed freely with Unguent. Zinci Oxyd., and afterwards enveloped smoothly, from the foot upwards, with bands of linen, or patent lint, dipped in Goulard or Glycerine lotion warm, the whole being subjected to warm affusion long and repeatedly. The ointment is required to prevent the adhesion of the straps to the skin, which might otherwise occur to a rather troublesome extent. Weak alkaline solutions are the topical applications generally recommended, but are not, I think, superior to the lotions just mentioned, or even to warm water. When tested, the profuse disharge will, like healthy serum, generally be found alkaline; and simple dilution appears to diminish its acrid quality, while the moistened lint, by absorbing it as it is poured forth, prevents its mischievous diffusion.

The strapping need not be renewed more frequently than once in twelve hours; and, at each dressing, the scales should be cleared away as thoroughly as possible without irritating the sensitive cutis. If a single application of leeches should not cut short the inflammation, they may be repeated until that end is fully attained.

Patients, indeed, of a sanguine temperament and plethoric habit will sometimes require venesection.

Brisk purging and antimonials in nauseating doses, with low diet, must follow the local or general abstraction of blood; after which I have prescribed, with the best effect, the combination of diuretics and diaphoretics contained in the ensuing formula :—

℞	Potassæ Acetat. . .	ʒj. ad ʒij.
	Potass. Nitrat. . .	gr. viij.
	Liq. Ammon. Acet. .	ʒvj.
	Vin. Colchici, . . .	♏xx.
	Aq. Destillat. . . .	ʒv.

M. ter die sumend.

When the acuteness of the attack has somewhat subsided, a roller of thin calico, or mull muslin, may be applied with moderate firmness over the wet strapping, and the bandage may remain undisturbed for twenty-four hours, provided that it be kept constantly moist. Mild tonics,—particularly the mineral acids,—and a more nutritious diet are now permissible.

In the *chronic stage*, emollients and antiphlogistics must give place to astringent dressings, such as Creasote lotion, or the solutions of sulphate of zinc or chloride of lime, commencing with diluted forms of these preparations, and gradually increasing their strength. The wash of nitrate of silver, too, may be used in the proportion of ʒij. or

3j. to the ounce. Air and exercise (which can only be taken with the limb properly bandaged) will also be found highly serviceable. In obstinate cases of chronic Eczema, arsenic will often prove successful when all other medical treatment has failed.

As the skin regains its healthy character, the bandage will not require renewal oftener than every second or third day, but still ought to be moistened occasionally with some astringent lotion. Finally, it should not be abandoned prematurely, more especially when the veins of the limb are varicose.*

Acute and Chronic Eczema treated by the Bandage.

Case XIX.—Mrs. P.—, æt. 57, applied to me in January, 1851, with two inflamed ulcers above the outer ankle of the left leg, surrounded by eczematous excoriation; for which I directed leeches, two to each sore, and a poultice, telling her to call the next day to have the limb bandaged.

She did not return until June 30, when the skin of the entire leg between the knee and ankle was affected with acute Eczema, and dotted with six small ulcers and one large sore.

* After the cure of chronic Eczema, it is often quite as necessary to adopt the precaution of keeping up counter-irritation, for some length of time, as in old cases of ulcer. The remarks, therefore, at p. 44, apply with equal force to long-existing Eczema.

The history she now gave was as follows. In July, 1850 (the veins of this limb having been varicose since a pregnancy twenty years before), inflammation commenced just above the ankle, and soon spread round the leg. In October, it resembled a severe scald, discharging water freely, and the skin ulcerated, giving rise to the two sores for which she had consulted me in January. The leeches at that time so reduced the inflammation and improved the excoriated surface, that she put on a roller herself, and succeeded in healing the smaller of the two ulcers. The Eczema, however, did not wholly disappear; and, towards, the end of May, it became so much worse that she determined again to have recourse to leeches. Unfortunately, instead of affixing them to the remaining sore, she applied six to the inflamed skin. The leech-bites ulcerated, and she came back to me once more at the end of June, in the plight I have described above, being quite deprived of sleep by the pain she suffered, and scarcely able to stand.

June 30th.—I directed her to cleanse the surface from a coating of red ointment and scales, with a weak solution of Carbonate of soda, and a bread poultice, applying first, three leeches to the original ulcer. Prescribed, also, saline aperients and alteratives. On the day following, I strapped

the leg with linen bands soaked in warm Goulard lotion, enjoining frequent affusion therewith; and two days afterwards, the heat and pain having subsided, this was changed for a lotion of Creasote and Glycerine. The leeches were twice repeated to the large sore; in a week the greater part of the inflamed skin was sound, and five of the six small ulcers were healed.

Aug. 12.—The two remaining ulcers cicatrized. The whole of the skin sound, but still somewhat red and tender. Ordered the surface to be washed with a solution of Chloride of lime, and the straps and bandage to be moistened with the same, under which the skin soon recovered its natural tint and firmness.

Case XX.—Mrs. T.——, a tall, spare woman about 50, consulted me July 22, 1852, with a large superficial ulceration on the outer ankle of the left leg, and a smaller sore upon the inner ankle of the same limb; on the inside of the right leg, an immense ulcer, upwards of six inches in length, with ten or twelve small ones, some of them deep and callous, scattered over its surface. The skin was affected with chronic Eczema, from the knees to the feet, with much œdema and induration round both ankles. A constant serous discharge oozed from the inflamed integument, which was covered

with laminated scales, perpetually desquamating and giving place to others.

For the last twenty years she has never been long free from eczematous excoriation and ulceration; and the present severe attack has continued nearly twelve months, the two largest ulcers having existed half that time. The veins of the left leg have been varicose for many years, the cuticular branches, generally, being much dilated, and the trunk of the internal saphena presenting several large sacculi (one as big as a walnut) a little below the knee. The veins of the right leg sound. Her health is feeble, and she is subject to erysipelas on the face, which, she fancies, is more liable to come on when the leg improves.

July 22.—Washed the ulcers over with solution of Nitrate of silver; dressed them with Creasote and Glycerine lotion, and strapped both legs with linen bands dipped in the same; applying compresses of spongio-piline upon the dilated veins of the left leg, and directing frequent affusion with warm Goulard lotion over the bandage. Prescribed Sulphate of iron with dilute Sulphuric acid, twice a day.

July 29.—All the ulcers granulating healthily. The skin much less inflamed, and the discharge from its surface greatly diminished. Under the support of the straps and roller, she had been able

to walk very comfortably. Cleared off the scales at each dressing, and commenced, this day, the use of a weak solution of Chloride of lime.

Oct. 10.—With the exception of a minute sore below the inner ankle of the left leg, all the ulcers are healed. The skin of both legs is sound, but the cuticle still desquamates slightly. The varicose enlargements are very much smaller in size. For some weeks she has been enabled to exert herself more than she has done for years, and feels her health decidedly improved. No threatening of erysipelas. To persevere with the bandage and Chloride of lime lotion, and take gr. v. of Plummer's pill twice a week, with the Acetate of potass mixture once or twice daily.

Dec. 10.—A boil had formed below the knee, in the early part of November, which had caused some slight return of inflammation in its neighbourhood, and had left a small ulcer. The granulations being high, I touched them with Nitrate of silver, and applied a compress of lint. The legs are in other respects quite free from cutaneous disease, and her health continues good.

Case XXI.—Elizabeth Hobbs, æt. 56; Oct. 13, 1852; chronic Eczema surrounding the lower part of the left leg of twelve weeks' standing, several similar attacks having occurred on this

limb, during the last four years. She suffered from Varix formerly, during pregnancy, but the veins have not troubled her for the last thirteen years. She is not strong, yet considers that her health is tolerably good. Soon after the present eruption broke out, an ulcer formed on the inside of the leg, which is now inflamed, sloughy, and extremely sensitive, disturbing her rest at night and disabling her during the day.

Oct. 13.—Three leeches to the sore. Dressed with Lotio rubra, straps soaked in warm water, and a roller; warm affusion frequently. Ordered Pil. Hydrarg. Chlor. Co. gr. v. o. n.; Mist. Potass. Acetat. ter die.

Oct. 21.—The ulcer clean and free from inflammation. No pain or heat in the eczematous surface, which is paler, and discharges very scantily. The straps soaked in solution of Chloride of lime. Pt. Med.

Nov. 4.—The skin is sound and healthy looking, although still redder than natural. The sore granulating and contracting steadily. Pt.

Dec. 16.—She came to show me the state of the leg, which continues perfectly sound. The ulcer has been healed nearly a fortnight. Advised her to continue the bandage and Chloride of lime lotion.

Case XXII.—Sophia Westbury, æt. 64, Dec.

2, 1852. Veins varicose thirty-six years, since her first pregnancy. Six years ago, after an attack of illness, a rash or heat broke out over her body and limbs, which disappeared under treatment everywhere, except on the left leg. The skin above the inner ankle ulcerated, and continues still unhealed. Eczema came on round the sore seven months back, and spread half way up the leg. She suffers great heat and pain at night, but states that her health has not given way.

Dec. 2.—A poultice to cleanse away the scales and ointment, and three leeches to the ulcer. The mixture of Acetate of potass twice a day.

Dec. 3.—The sore and eczematous skin were dressed with Lotio rubra, the wet straps and bandage.

Dec. 16.—The Eczema quite well. The ulcer granulating.

Feb. 3.—The skin perfectly sound, and the sore nearly cicatrized. The latter has been very negligently attended to.

All these patients, who had felt the erect posture most hurtful and distressing before the bandage was resorted to, were able, under its support, to stand, walk, and attend to their accustomed occupations with ease and comfort. It will, further, I think, scarcely be disputed that the disease yielded at least as promptly as if strict confinement to the bed had been prescribed, while

they were taking an amount of exercise far more than sufficient to nullify all previous efforts which had been made to cure it.

It would be easy to swell the list of cases of Eczema of the lower extremity treated successfully by this combination. During the last few years I have had under my care a great number of severe and protracted examples of the malady, the rapid improvement of which confirms in the strongest manner the practical importance of the bandage therein; and I have found it quite as much needed, as a supplementary measure to the general treatment of many other cutaneous affections of the leg, which are not only less tractable without it, but, (like the eruption in Case XXII.) are very apt to terminate in ulceration.

THE END.

THOMAS DAY, Printer, 13. Carey-street, & 3, New-court, Lincoln's-inn.

ERRATUM.

At p. 17, l. 21, for "resilieance" read *resilience.*

I am glad to be able to add, as a note to Case IV., p. 84, that, yielding at length to my representations, and opposing no further obstacle to its healing, Mr. L. informs me that the small remnant of his sore has become soundly cicatrized while these pages have been passing through the press.

RD
560